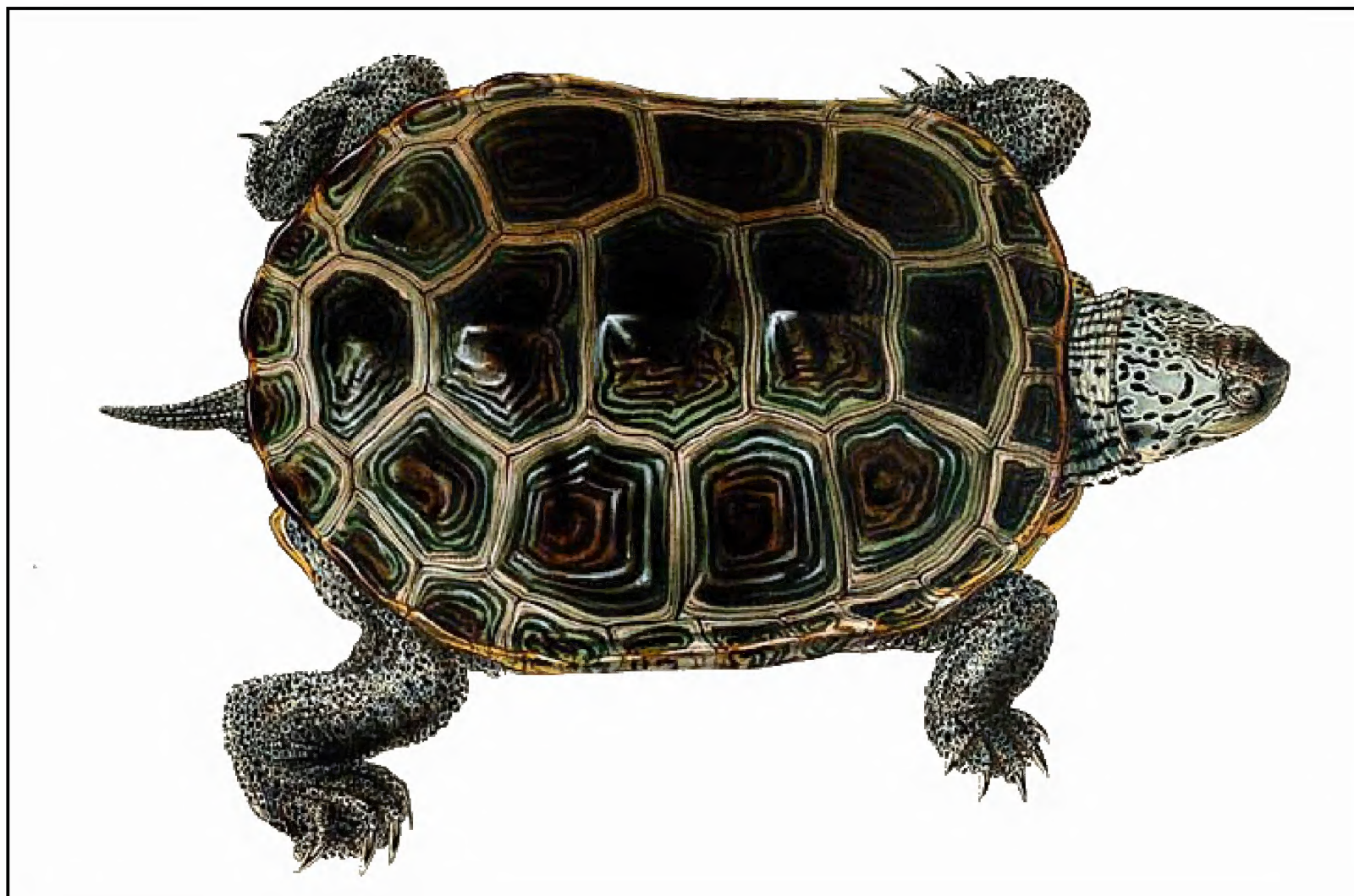

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BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY

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**A Case of Self-cannibalism in a Wild-caught South-Italian Asp Viper,
Vipera aspis hugyi (Squamata: Viperidae)**

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On 27 August 2014 at 1130 h, a female *Vipera aspis hugyi* Schinz, 1834 (18 cm total length) was found in a retrodunal environment (40.003121°N; 18.015930°E, datum WGS84; 4 m asl) between the Mediterranean sea and a pine forest, ca. 6 km SE of Gallipoli town, Lecce Province, southeastern Italy. This taxon was already known from three other localities in Lecce Province (Fattizzo and Marzano, 2002) and its occurrence in this newly recorded locality was not unexpected. The snake was temporarily removed from its habitat because it was surrounded by people and at obvious risk to be killed, with the intention to release it at the same spot a week later. It seemed healthy at the time of its capture, and was kept in a standard terrarium (24–28°C, 70–85% humidity) at the Provincial Wildlife Recovery Center of Lecce (input protocol OFP 331/14). After five days in captivity it was found dead, having ingested more than one-fourth of its own body. It was injected with 90% ethanol then preserved in 70% ethanol and stored at the Museo di Storia naturale del Salento (collection number Rept Ita – 71).

This case represents the first record of self-cannibalism in *Vipera aspis*. Such a suicidal behavior, also called autophagy, has been occasionally observed in snakes but is rarely properly documented (Mitchell et al., 1982; Rossi and Rossi, 2002;

Mattison, 2007). It seems to be often caused by the stress generated by captivity, as is apparently also the case here.

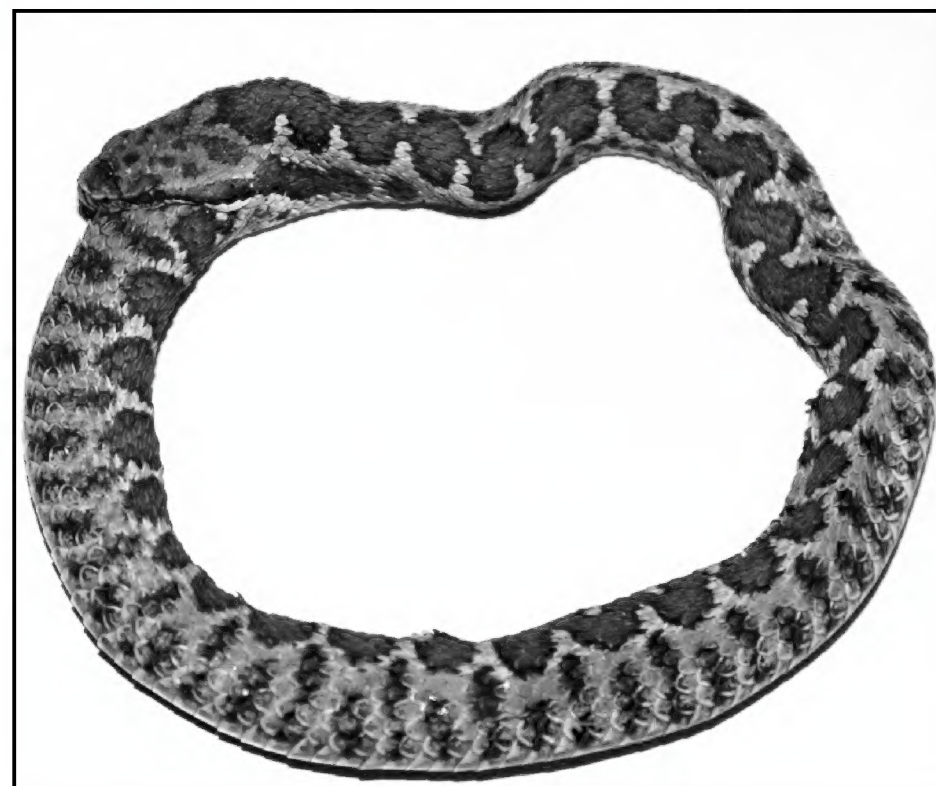


Figure 1. A South-Italian Asp Viper which swallowed more than a quarter of its own body.

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**Notes on Mexican Herpetofauna 26:
Aggressive Behavior in Captive Pygmy Alligator Lizards,
Gerrhonotus parvus Knight and Scudday, 1985**

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Abstract

Gerrhonotus parvus is a species endemic to the state of Nuevo León, Mexico, and presently is known from only four localities within the Sierra Madre Oriental, including the newly discovered population in the municipality of Santa Catarina. However, nothing has been documented about the social behavior of the species, and here we present the first report aggressive behavior between a male and female.

Resumen

Gerrhonotus parvus es una especie endémica para el estado de Nuevo León y actualmente conocida de solamente 4 localidades dentro de la Sierra Madre Oriental, incluyendo la nueva población descubierta en el municipio de Santa Catarina, Nuevo León, México. Sin embargo nada se ha documentado sobre el comportamiento social de la especie, aquí presentamos el primer reporte de comportamiento agresivo entre un macho y hembra.

Introduction

Subsequent to the original description of *Gerrhonotus parvus* by Knight and Scudday (1985), most of the information on this species, known as the pygmy alligator lizard / *falso escorpión pigmeo*, has been published by our group. We have covered numerous aspects of the species, but behavior in the field and captivity, especially territorial behavior, remains largely undescribed. In the family Anguidae, especially the genus *Gerrhonotus*, territorial fights between males and aggressive behavior in courtship have been documented (Smith, 1979).

Gerrhonotus infernalis, like *G. parvus* is a secretive species (Lemos-Espinal and Dixon, 2014). We have documented that these two species are sympatric in San Isidro Canyon, Santiago, Nuevo León, but whether they have parallel activity is still unknown. We know they can be found in the same habitat at the same time because on one occasion the corresponding author witnessed an adult *G. infernalis* consuming a *G. parvus* in one of the branches of this canyon. It is known that *G. infernalis* is a very territorial lizard, with sexual dimorphism resulting in a selective advantage for obtaining more females and perhaps richer habitat resources (García-Bastida et al., 2013). We have not documented this for *G. parvus*, but have noted in our studies of the species that males seem to have slightly different head measurements. We have no information on population dynamics of *G. parvus* in the different localities. Other aspects of *G. infernalis* are documented by Lemos-Espinal and Dixon (2013), but behavioral aspects are poorly documented. Below is a list of publications on *Gerrhonotus parvus*.

- Smith (1986) proposed a taxonomic change of *Gerrhonotus parvus* to *Elgaria parva* based on similarity of the head scalation to other members of this genus.

- Banda-Leal et al. (2002) documented a new locality for *G. parvus* (as *Elgaria parva*) in San Isidro Canyon, discussed the morphology and taxonomic rank of the species, and provided a description of the habitat that differs significantly from the type locality in Galeana, Nuevo León. San Isidro Canyon is a limestone canyon at an altitude of 1600 m. The first specimen was found on the floor of the canyon beside a rock wall, with decomposing organic matter as a substrate.

- Bryson et al. (2003) documented several natural history aspects of *G. parvus* at the type locality and at San Isidro Canyon, with notes on some sympatric herpetofaunal species in the area.

- Banda-Leal et al. (2005) registered the largest known specimen of *G. parvus* from San Isidro Canyon, Santiago, Nuevo León. Previously the paratype from Galeana was the largest specimen, as reported by Knight and Scudday (1985) with a snout–vent length (SVL) of 71.7 mm. It was maintained in captivity for about five years and was deposited in the collection at Sull Ross University. The specimen from San Isidro Canyon measured 76.5 mm SVL, exceeding the paratype by 4.8 millimeters. This larger specimen was found in May at the base of the branch canyon which at that time was flooded. The specimen had recently left a water pond; unfortunately it died, apparently having drowned. Lizards in branch canyons of the larger San Isidro Canyon are at risk due to flooding of the area and formation of deep ponds.

- Conroy et al. (2005) used Bayesian analysis of DNA sequences to determine the phylogenetic position of *Elgaria parva*, finding it to be the sister of *Gerrhonotus infernalis* and proposed restoring it to the genus *Gerrhonotus*, as originally described by Knight and Scudday (1985).

- Lazcano and Bryson (2010) registered the occurrence of a



Figure 1. Experimental unit within the Laboratorio de Herpetología FCB/UANL. Photograph by David Lazcano.

hatchling *G. parvus* for the first time in the San Isidro Canyon. The hatchling described had a complete tail and its coloration was very different from the adults, consisting of clear and very dark bands that are strongly contrasting, whereas the adults have bands that are not contrasting. The hatchlings are very different from hatchlings of the sympatric *G. infernalis*, which are very similar to adults of *G. infernalis*.

- Bryson and Graham (2010) described a new anguid from the state of Tamaulipas, Mexico, which they named *Gerrhonotus farri*. This species falls within the group of small anguids that we have proposed.
- Banda-Leal et al. (2013) reported on the sympatric herpetofauna in the area of San Isidro Canyon.
- Banda-Leal et al. (2014a) reported on possible predator species of *G. parvus* present in the area of San Isidro Canyon.
- Banda-Leal et al. (2014b) reported a range extension and clutch size for *G. parvus* in the municipality of Santa Catarina, Nuevo León, Mexico.

As mentioned above this is a very secretive species. We have found specimens moving slowly through leaf litter, hidden under rocks or in/on *Agave lechuguilla* (maguey lechuguilla), and in/on rock walls. Our animals have often been found after a rainy day; they appear to be crepuscular and prefer moderate temperatures, starting a more active period in the month of October, very similar to *G. infernalis*. During the hot and low humidity months they are practically inactive.

Due to the secretive habits of *G. parvus*, little has been published on its ecology, natural history and reproduction. Many of these aspects are being studied at the moment, but here we document a behavior we observed in our captive colony.

Study Site

Our study took place in the Laboratorio de Herpetología at the Facultad de Ciencias Biológicas, Universidad Autónoma de Nuevo León.

Materials and Methods

At present we are maintaining in captivity 11 individuals of *G. parvus* (7 males, 3 females and 1 juvenile). They are housed

in individual 20-gallon glass aquaria, with peat moss, rocks, water bowl and a few foam blocks as hiding places. Initially no hot spot was provided as we were uncertain if they thermo-regulate.

Our intent was to closely observe their behavior. First we put three males in a large glass aquarium (140 × 40 × 100 cm), functioning as an experimental unit. We identified an alpha male; he immediately established himself in middle the of the aquarium where we had placed a live *Agave lechuguilla* (20 cm high × 38 cm wide). We never saw any agonistic behavior between males, but he seemed to be the dominant male. A hot spot was then placed near the agave. The photoperiod was that of the Monterrey Metropolitan Area. Daytime temperatures were 21–24 °C; nighttime 19–21 °C. The hot spot temperatures fluctuated from 32 to 36 °C (10:00–17:00 h). We observed the alpha male regularly basking, but did not measure the time spent. On a few occasions we observed another male basking in the lower layers of the agave leaves. Feeding (crickets) was done on Tuesday and Thursday. The animals were measured and weighed.

Results

On 8 December 2014 we observed agonistic behavior between the alpha male and a recently introduced female. We discovered the male biting the female on the dorsolateral portion of the head, with a substantial amount of blood on her, on the male's mouth and on the ground. This happened about a week after introducing the female. We have no time frame for the duration of the aggression.



Figure 2. Male *Gerrhonotus parvus* attacking the female. Photograph by Daniel Montoya-Ferrer.



Figure 3. Male *Gerrhonotus parvus* attacking the female. Photograph by Daniel Montoya-Ferrer.

Meristic data for the two *G. parvus* follow. Female: weight 6.67 g; snout–vent length 70 mm; tail length 93 mm; total length 163 mm; head width 12 mm. This individual had a complete original tail. Male: weight 9.55 g; snout–vent length 72 mm; tail length 117 mm; total length 189 mm; head width 15 mm. This individual had a partial tail, with a section of new growth.

Discussion and Conclusion

The presence of bite marks is associated with agonistic behavior. Such behavior is very common with anguid genera. Formanowicz et al. (1990) documented it in *Abronia vasconcelosii*, mentioning that they found nine types of agonistic behavior and that this behavior is more frequently seen between two males than between a male and a female. They also reported that neither body size nor residency status influenced these behavioral patterns. One would expect that males would fight eagerly to protect their residential area or females from other males. General information on the behavior of *G. infernalis* has been documented by Lemos-Espinal and Smith (2007) and by Lemos-Espinal and Dixon (2013).

In a study conducted by Garcia-Bastida et al. (2013) the population of *G. infernalis* in Parque Ecologico Chipinque showed sexual dimorphism. Larger heads in males provide an advantage in male-male combats or during copulation (Herrel et al., 1996, 1999; Huasak et.al., 2006; McBrayer and Anderson,

2007). In our studies of *G. infernalis* colonies from Parque Ecológico Chipinque (Garcia-Bastida et al., 2013) and San Isidro Canyon, many of the males had bite marks and scars, but the largest individuals did not necessarily have more bites. In the field no bite marks have been observed in *G. parvus*.

Sexual dimorphism may also be present within the population of *G. parvus* in San Ignacio Canyon, as differences in the cranial and body measurements appear to be present. Though we have not conducted a statistical analysis we can easily distinguish adult males from females.

When keeping the species in captivity we did very well with juveniles and adults, but rearing the hatchlings has proved to be a nightmare. We suspect that they are more delicate and dehydrate easily, so maintaining them to follow ontogeny has been quite a challenge. Studies are currently being conducted to investigate home ranges, feeding frequencies and substrate preference in captivity, and whether there exists sexual dimorphism and a difference in bite force between males and females.

This paper represents the first report of behavior in *G. parvus* and much remains to be learned about intraspecific and interspecific behavior in this species. At the moment the species is considered endemic to the state of Nuevo León, but it is likely to be found in the state of Coahuila, as the plant communities it inhabits continue into that state.

In the field no bite marks have been observed in *G. parvus* comparable to as those found in *G. infernalis* in Parque Ecológico Chipinque, where biting is part of the aggressive behavior between male-male combatants and also occurs when males are courting females.

Acknowledgments

We would like to thank the following national and international institutions for financial support to conduct this study in the field and laboratory: Universidad Autónoma de Nuevo León, Instituto Bioclon S.A. de C.V., San Antonio and Los Angeles Zoos. We thank SEMARNAT for issuing collecting permits and providing the most recent ones: Oficio Num. SGPA/DGVS/01867/14 and Oficio Num. SGPA/DGVS/033471/14. We would also like to thank all the persons that participated in the field and laboratory work.

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**Comments on the Herpetological Publications of Romeo J. Mansueti,
with Special Reference to Baltimore, Maryland. Part 1: Introduction and Amphibians**

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“In recent years, the distribution of amphibians and reptiles around Baltimore City has taken great strides.” — Mansueti (1941a)

Occasionally the aura surrounding a person shields his work from criticism. Such has been the case with Romeo J. Mansueti, the foremost vertebrate zoologist in Maryland at the time of his death at the age of 40 in 1963. He was a prominent figure in the formative years of the Natural History Society of Maryland, and a frequent contributor to the Society’s publications. An untimely death also contributed to the revered status he enjoyed among older naturalists, themselves now mostly deceased. Following service in World War II and internment by the Germans as a prisoner of war, Mansueti went on to obtain a B.Sci. (1948) and a M.Sci. (1950), both from the University of Maryland, and a Sci.D. (1957) from Johns Hopkins University. Both theses dealt with ichthyological subjects and marked his transformation from naturalist to scientist, further enhancing his standing. A lengthy paper on the threatened and extinct mammals of Maryland and the District of Columbia was published in 1950.

Mansueti’s first passion in natural history was herpetology and most of his publications on this subject were published when he was in his teens. By far the most important of these is a paper on the amphibians and reptiles occurring in and near the city of Baltimore published when he was 18 (Mansueti, 1941b). Mansueti establishes his credentials at the outset, stating: “The following annotated list . . . has been prepared after approximately four years of collecting in and about Baltimore . . . The writer has made frequent collecting trips for herpetological specimens on practically every available day in the collecting season, and on these field trips has visited almost every locality listed in the key.” Mansueti’s “Key to Map of Baltimore City and Vicinity” lists 89 place-names and streams, of which about 80 would qualify as collecting sites. He also lists 26 people “and many others” who supplied him with locality records. In his introductory material, in the final two sentences of the three that comprise “Distribution,” Mansueti claims: “The distribution of amphibians and reptiles in Baltimore and vicinity is discussed in the remarks of the text of this list. Since ranges of amphibians and reptiles are continually changing by the extension [*sic*] of their habitat, the change can only be proven with the actual individual, and thus the importance of the specimen and locality is evident.” The latter statement, nearly beyond criticism due to its opacity, is quite strange since in nearly all cases contraction of habitat due to degradation or outright destruction is the rule. His apparent advocacy for systematic collections is laudable, but, as noted repeatedly below, theory and practice meet infrequently. The former statement is unfortunately not true, especially since the only important aspect of Mansueti’s ambitious but inadequately referenced work is the haphazardly listed localities it contains, but for which there is rarely any documentation or explication. In this regard Mansueti became part of a long and unfortunate Maryland tradition that has its origin with Hay (1902),

continues with Kelly et al. (1936), accelerates with Cooper (1960, 1965), and reaches its apogee or, more accurately, nadir with Harris (1969b, 1975), who maps hundreds of localities for which there is no support in systematic collections or the literature.

Despite Mansueti’s (1941b) claim that his catalogue is “annotated,” unfortunately it is not. No catalogue numbers or dates of collection are cited, calling dates for frogs are absent, and other natural history notes are scarce. A nine-page bibliography is included, but no literature is cited in the text. In fact, of those local publications that Mansueti lists in his bibliography, he frequently fails to consult or misreads them, as noted in the comments below. Considerable space is wasted on preservation techniques, exotics and common names. The ironically named section “Need of Layman’s Help in Natural History Surveys,” which goes on at length about the collection, transporting and shipment of specimens is irrelevant and is more squandered space that could have been put to better use. His map, located between pages three and four, is poorly drafted. Although Baltimore City is indicated, the surrounding counties of Anne Arundel, Baltimore, Carroll, Harford and Howard are not, nor is the Middle Patuxent River, a significant stream on his southwestern boundary. Even those familiar with the geography of Maryland will wonder where Anne Arundel County and Howard County start and stop since no delineation is made between them. The Gunpowder Falls—one of the major streams in his report—is badly misplaced and is actually the Little Gunpowder Falls, but still the rendering is inaccurate. Numerous place-names, such as Camp Linstead (Anne Arundel County), Essex (Baltimore County), Glen Burnie (Anne Arundel County), Pikesville (Baltimore County), Pimlico (Baltimore City) and Timonium (Baltimore County), are not correctly positioned, while others, such as Jessup (Anne Arundel County-Howard County boundary) and Savage (Howard County), are not even close to where they actually exist. Mansueti effusively credits R. H. McCauley, Jr., for reviewing his manuscript, but only in the generally well-crafted descriptions does one see McCauley’s guidance. One also wonders what role, if any, the editorial board of the Natural History Society of Maryland played in this misbegotten work.

Mansueti (1941b) draws an important but erroneous conclusion from his study. Under “Ecological Factors of Baltimore and Vicinity,” he dismisses the Fall Line as a limiting factor in amphibian and reptile distribution. He cites only four species [*Pseudotriton montanus*, “*Rana pipiens*” (= *R. sphenoccephala*), *Carphophis amoenus* and *Lampropeltis getula*] that are characteristic of the coastal plain but have encroached onto the piedmont, but Mansueti’s only locality for *P. montanus* is in the piedmont and he supplies no records at all for *R. sphenoccephala*, which he states “is found everywhere in our locality.” (See the species

accounts for a fuller discussion.) Mansueti overlooks the following species that by his own “data” are largely or completely confined to the coastal plain: *Sceloporus undulatus*, *Plestiodon fasciatus*, *Plestiodon laticeps*, *Aspidoscelis sexlineata* and *Opheodrys aestivus*. Five more species may be added if one dismisses his strange treatment of *Bufo fowleri*, *Acris crepitans*, *Pseudemys rubriventris*, *Kinosternon subrubrum* and *Sternotherus odoratus*. Conversely, several species are much more characteristic of the piedmont: *Desmognathus fuscus*, *Eurycea bislineata*, *Pseudotriton ruber*, *Notophthalmus viridescens* and *Regina septemvittata*. None of Mansueti’s “records” for *Eurycea longicauda* are from the coastal plain and his “data” on *Plethodon glutinosus* are confined to the piedmont. Excluding “*Hyla versicolor*,” which is now known to comprise two species, and the feral *Trachemys scripta*, based on current knowledge the distributions of 21 of the 47 species (44.7%) considered by Mansueti (1941b) are strongly influenced by the Fall Line.

McCauley (1945), despite an assertion to the contrary (page 1), did virtually no field work in the piedmont and the immediately adjacent coastal plain [where Mansueti (1941b) occupies a central position], but felt that Mansueti was a credible source of information and accepts and maps the vast majority of his reptile sites. McCauley’s generally meticulous work thus lent credence to Mansueti’s localities for this group. Harris (1969b, 1975), who was in a better position than McCauley to judge the merits of Mansueti’s work, merely copied McCauley’s maps, but worsened an already bad situation by treating McCauley’s map symbols (all rendered hollow) as solid. Furthermore, Harris (1969b, 1975) appears to have plotted few, if any, of Mansueti’s amphibian localities or to have consulted the NHSM collection’s holdings for Baltimore. Why this should be is not clear since Harris lists (1969b) and “cites” (1975) Mansueti (1941b), as well as nearly all references listed below that were published by the NHSM, and was curator of the collection at the time of his surveys. Furthermore, it is bewildering that Cooper (1970) could make the following statement: “In this latest distributional survey [1969] of the herpetofauna of Maryland and D. C., Herbert S. Harris, Jr., has scrupulously tried to track down every locality record which has turned up in the decade since publication of Cooper’s 1960 survey, has added some records previously missed, and, more importantly, has meticulously plotted all of these on annotated distribution maps for each species.” The collections of the American Museum of Natural History and the University of Michigan Museum of Zoology, among others, were not consulted by Harris or, for that matter, by Cooper (1960). Actually no systematic collections are referenced by Cooper or Harris, although one deduces from their acknowledgments that records were obtained from the Carnegie Museum of Natural History and the National Museum of Natural History. Furthermore, words such as “meticulously” and “scrupulously” cannot possibly be associated with the work of Harris—in 1970 or at any time (e.g., Campbell and Armstrong, 1979; McCranie and Wilson, 1979; Barker, 1992; McCranie, 1993; Miller, 2013, herein). It is not clear how Cooper, in Lexington, Kentucky, could make such a statement about Harris’s work habits in Baltimore, Maryland.

Many of the localities listed by Mansueti (1941b) are uncontroversial, their lack of documentation notwithstanding. However, due to the continuum that runs from his unexceptional

listings to those that are unusual or strange, I have commented on many of them. Due to the divergent reception that Mansueti (1941b) has received—the acceptance of nearly all reptile localities by McCauley (1945), the amphibian records receiving little, if any, attention by Harris (1969b, 1975)—this aspect has been emphasized. This is particularly true for Baltimore. Because the documented distribution of the herpetofauna of Baltimore (92 square miles: 81 land, 11 water) has been a neglected subject, I have listed nearly all records for this area that have specific data.

A frequent criticism that appears herein of Mansueti (1941b), which was published in December, is that he overlooks certain specimen records in the NHSM, in particular those from 1941. Of course, the dates when a specimen is collected, when it is preserved, and when it becomes the property of a systematic collection may differ greatly. In keeping with Mansueti’s lack of interest in detail and documentation, he does not provide a date for when his publication went to press. However, given Mansueti’s lack of regard for users of his publication, its innocence notwithstanding, I have not been disposed to give him the benefit of the doubt. Also, given his many contacts, field activity would likely have been reported to him late into the collecting season, which may have allowed for amendment of his manuscript. Furthermore, an errata slip, noting only six grammatical errors, was issued with Mansueti (1941b) and written by him. This would have been an excellent opportunity to, among noting numerous other corrections, acknowledge the official first report of *Pseudotriton montanus* in the state (Fowler, 1941), as well as the discovery of *Glyptemys muhlenbergii* (Miller, in press).

Despite the preceding criticisms and those that follow, the most unfortunate aspect of Mansueti’s interest in herpetology has not been his publications—which can be corrected—but rather his tragically poor curation of the NHSM collection—which cannot. It is not known precisely who and how many are responsible for the deplorable state of this collection during its formative years—as indicated all too frequently below by the word “discarded” following the citation of specimens—but there is no doubt that Mansueti bears most of the blame. Based on my inventory of the collection during 1976–1977, the deciding factor was the choice of bad paper, as evinced by remnant tags in Mansueti’s unmistakably beautiful handwriting, which also dominates the catalogues and card files. An assessment of Mansueti’s involvement with the reptile portion of the collection, which ends at NHSM 1691 (1684 entries), shows a total of 832 discarded specimens (49.4%), of which 582 are from Maryland (34.5%). Although the discarded non-Maryland material does not appear to be of any great importance, the losses from Maryland are harrowing and constitute much of the heart of the collection. I have not quantified the discarded rates for amphibians, but the percentages are almost certainly similar. During the post-Mansueti period, H. S. Harris, Jr. recognized the “paper problem” and museum-quality Dennison tags were substituted where possible. However, a word needs to be said about a statement by Harris (2009) that appears in his privately controlled journal: “The NHSM houses the largest collection of Maryland amphibians and reptiles available for scientific study.” Actually the most important herpetological collection from Maryland is housed at Towson University (ca. 11,000 specimens), the National Museum’s holdings are of greater significance, and the

Carnegie Museum has a vastly more important collection of amphibians. In a final and ironic note, the earliest and most important collection of amphibians from Baltimore and vicinity was once present on the opposite side of the country in the California Academy of Sciences. These specimens were collected by the San Francisco native and distinguished herpetologist John Van Denburgh (1872–1924) from 1898 through 1901 while earning an M.D. at Johns Hopkins University in 1902. Foreshadowing the disaster that would befall the NHSM collection five decades later, all of these specimens were destroyed in the San Francisco earthquake and fire of 1906.

The following collection abbreviations are used: CAS (California Academy of Sciences), CM (Carnegie Museum of Natural History), MCZ (Museum of Comparative Zoology, Harvard University), MVZ (Museum of Vertebrate Zoology, University of California, Berkeley), NHSM (Natural History Society of Maryland), NHSM/HS (Natural History Society of Maryland/Herbert S. Harris, Jr.), TSU (Towson University), UF (Florida Museum of Natural History, University of Florida), USNM (National Museum of Natural History). All cited material has been verified either by collection managers (CM, MCZ, MVZ, USNM) or by me (NHSM, TSU, UF).

Ambystomatidae

Ambystoma maculatum. Of eight localities listed by Mansueti (1941b), four in Baltimore City and four in Baltimore County, only half are vouchered, and one of these, “St. Mary’s Seminary,” should read St. Mary’s Cemetery (Homeland Avenue, Govans, 3 April 1941), based on NHSM 546. Mansueti states that this species “has been found more abundantly in the city than outside,” which may have been true at the time, but which bespeaks insufficient field experience, notwithstanding Mansueti’s claim to the contrary. The statement that spotted salamanders have been “captured . . . throughout Herring Run Park [Baltimore City]” is unfortunately not borne out by vouchers. M. F. Groves, in the Journal of Field Notes, Department of Herpetology, NHSM, records the following observation from 31 March 1941: An adult was “found under a board in a damp spot beside a marshy pond. This is only record of the species from Cherry Hill [Baltimore City] of which I know. The amphibian was very sluggish. *Rana sylvatica* were calling in the pond and in several similar ponds nearby. This was at 2:30 PM on a cloudy, slightly windy day with a temperature of 60 degrees F. The pond was deep within a deciduous woods.” Mansueti (1940a, 1941b) does not record this species from Cherry Hill. Harris (1969b, 1975) plots one site for Baltimore, but its basis is not in the public domain, and he overlooks the following localities from the city: Western Run Parkway (e.g., CM 26154-26155, 28 February 1946; NHSM 29, 5 February 1939); Curtiss-Wright Airport (e.g., NHSM 59, 5 February 1939) and the specimen from Govans.

Ambystoma opacum. Contrary to the range maps of several authors (e.g., Anderson, 1967; Conant and Collins, 1991; Petranksa, 1998), this species has a limited distribution in the Maryland piedmont (R. W. Miller, unpublished data). Not surprisingly, Mansueti (1941b) had only one record available to him: “along Gwynns Falls Park in Baltimore City” (NHSM 285, no date but probably collected in the late 1930s). Buxbaum

(1942) apparently mentions the same record. The site is overlooked by Harris (1969b, 1975), who maps no records for the city.

Plethodontidae

Desmognathus fuscus. Coastal plain sites for this upland species are always of interest, and Mansueti (1941b) lists three: Crownsville and Severn (Anne Arundel County) and Cherry Hill (Baltimore City), but there is nothing in the NHSM collection that supports them, although Cherry Hill is also listed in Mansueti (1940a). There is also no documentation for the following “collected” sites listed by Mansueti: Baltimore City: Clifton Park, Gwynn’s Falls Park, Herring Run Park, “St. Mary’s Seminary” (this should probably read St. Mary’s Cemetery, Homeland Avenue, Govans); Baltimore County: Catonsville, Gunpowder Falls area (between Harford Road and Philadelphia Road), Gwynn Oak Park, Halethorpe, Texas; Howard County: Ellicott City. The species is vouchered from Baltimore from Western Run Parkway (NHSM 484, 21 March 1940; NHSM 708, 2 April 1942; NHSM 1258-1260, 17 August 1940); Western Run (NHSM 1204-1205, 2 February 1947); Bowley’s Lane (NHSM 1591-1592, 1594-1599, -- April 1947); St. Paul’s School, Mount Washington (NHSM 1608-1615, 1617-1618, 1620-1621, 1623-1624, 28 April 1947); Clipper Mill Road (NHSM 3937-3939, 3946-3947 -- October 1957) and Frankford Avenue, 1.0 mile “E” (SE) Belair Road (US Route 1) (NHSM 3942-3945, no date). Specimens were formerly present from Windsor Hills, Baltimore (CAS 5355, 12 March 1899; CAS 5363-5365, 23 March 1901). Mansueti overlooks the following: Sykesville, Carroll County (NHSM 182, 23 March 1935); McMahon Quarry, Baltimore County (NHSM 54, 65, 8 July 1939; NHSM 1255-1257, 23 March 1941; see also W. Norman, 1939, which Mansueti lists); “Morgan Run,” Loch Raven, Baltimore County (NHSM 295, 23 July 1939); vicinity McMahon Quarry, Baltimore County (NHSM 399, 402, 490-493, 22 March 1940). Other records for Baltimore are: Dead Run, Leakin Park, -- August 1941 (Buxbaum, 1942); Moore’s Run, 1.0 mile S Radecke Avenue, 3 April 1954 (Reed, 1957b; this specimen is in the collection of D. W. Linzey and may still be extant) and West Bay Avenue, Brooklyn (Odell, 1961). Cooper (1956) attributes the site of Shore Acres (Anne Arundel County) to Mansueti (1941b), but he does not list it. Harris (1969b, 1975) maps only one site for Baltimore; its basis is unknown.

Eurycea bislineata. Among other localities, some of which are too vague to comment on, Mansueti (1941b) lists Herring Run Park and Western Run Parkway in Baltimore City. Neither of these sites is documented, although J. Norman (1939) lists the species from the latter. The species has been vouchered from the following sites in Baltimore: Govans (NHSM 520-523, 28 January 1941); Pimlico (NHSM 847, 18 February 1941); Bowley’s Lane (NHSM 1588-1590, 1593, -- April 1947); St. Paul’s School, Mount Washington (NHSM 1616, 1619, 28 April 1947); Frankford Avenue, 1.0 mile “E” (SE) Belair Road (US Route 1) (NHSM 3464-3465, no date); Clipper Mill Road (NHSM 3476-3480, 2 October 1957; NHSM 3523-3525, -- October 1957). Harris (1969b, 1975) appears to plot only one site for the city; this may or may not be based on Clipper Mill Road (NHSM/HS 17-18, 18 March 1959). Other specimens, no longer extant, are from Windsor Hills, Baltimore (CAS 5368-

5369, 12 March 1899). Additional localities for Baltimore are: Dead Run, Leakin Park (Buxbaum, 1942); Moore's Run, 1.0 mile S Radecke Avenue, 27 February 1954 and 3 April 1954 (Reed, 1957b; specimens collected on the latter date may still be extant); Herring Run near Mount Pleasant Golf Course, 5 June 1954 (Reed, 1957b—discarded). Other sites not mentioned by Mansueti (1941b) are McMahon Quarry, Baltimore County (NHSM 58, 8 July 1939; NHSM 488, 22 March 1940; see also W. Norman, 1939, which Mansueti lists), Sykesville, Carroll County (e.g., NHSM 107, 112, 23 March 1935) and Arbutus, Baltimore County (NHSM 629, 23 March 1941). There was no support at the time for Mansueti's (1941b) listing of "Gunpowder Falls region" and Towson (Baltimore County).

Eurycea longicauda. Two reports from Baltimore City provided by Mansueti (1941b) have no documentation: Gwynn's Falls Park and Western Run Parkway. J. Norman (1939) does not list the species from the latter site. The species has been collected from only one site in Baltimore: Clipper Mill Road (NHSM 3227, 23 July 1958). Harris (1969b, 1975) plots no records for the city, although NHSM 3227 is mapped by Miller (1984) who fails to note that it had not been previously plotted. Two localities from Baltimore County are overlooked by Mansueti (1941b): McMahon Quarry (NHSM 171, 173, 21 May 1939; NHSM 844, 2 May 1939); near Reisterstown (NHSM 434, 8 July 1939); vicinity McMahon Quarry (NHSM 1221, 1223, 21 August 1940). W. Norman (1939) also notes its occurrence at McMahon Quarry, a publication listed by Mansueti (1941b). An additional site, "Gunpowder Falls area" (Baltimore County), was not documented at the time, although would be later (NHSM 4535, 1 June 1947). Mansueti's statement that longtails have been "taken all through the Patapsco State Park and vicinity . . ." is not borne out by the evidence, and his listing for "Jones Falls" is meaningless.

Plethodon cinereus. Mansueti (1941b) considers this species too common to list localities for; however, only one locality in Mansueti's time was vouchered for Baltimore: Western Run Parkway (e.g., NHSM 328-331, 21 March 1940). Other verified records for Baltimore are: Gwynn's Falls Park (MCZ 66667-66704, 5 April 1959); Clipper Mill Road (NHSM 3987-3994, -- October 1957); Frankford Avenue, 1.0 mile "E" (SE) Belair Road (US Route 1) (NHSM 3995-3998, no date); JCT Cylburn Lane and Green Spring Avenue [TSU 368 (3), 11 April 1966]; JCT Harford Road (MD Route 147) and Southern Avenue (TSU 489, 27 October 1966); Druid Hill Park (USNM 367864, 23 April 1978) and, formerly, Windsor Hills (CAS 5347-5354, 23 March 1901). Mansueti (1940a) states that the species has been "collected" at Cherry Hill, Baltimore, but evidently no material was preserved. Reed (1957b) lists nine sites for Baltimore, although all specimens associated with these localities have been discarded. Harris (1969b, 1975) plots no sites for the city.

Plethodon glutinosus. Mansueti's (1941b) entire Remarks are: "This species is apparently rather rare since is [sic] has only been taken in the highlands of the Gunpowder Falls near Harford Road, and it is said to have been taken in the Patapsco State Park, but no specimens are available from this region." Typically, Mansueti provides no specifics for these statements, although a reference to Patapsco State Park is found in Mansueti

(1941a), who states: "Mr. Harry Robertson told me that he and Mr. [Louis] Putens have found them there on the more hilly portions of the park." Mansueti (1941a) does not state where or when these observations were made. Prince (1961) notes finding the species "Under tarpaper on the hill side by the large dam [Bloede Dam, Glenartney] . . .," Patapsco State Park, 12 June 1948. Unfortunately he does not state which county, Baltimore or Howard. Harris (1966) reports that H. W. Campbell collected three individuals at Avalon, Patapsco State Park, Howard County in July 1950, but that the specimens are lost. Harris (1966) is unaware of the Mansueti and Prince statements and fails to acknowledge that many others had conducted field work in the park prior to him. As for the occurrence of the slimy salamander in the vicinity of Harford Road (MD Route 147) at the Gunpowder Falls, this site would eventually be documented by specimens (TSU 4122-4123) collected along Jennifer Branch on 29 April 1981. The first documented site for Mansueti's (1941b) area of concern is provided by Marsiglia (1950), who collected a specimen (NHSM 1938) from Loch Raven on 11 April 1948. The distribution of this species in the Maryland piedmont is indeed strange (R. W. Miller, unpublished data), but discussion of it is well beyond the scope of this note.

Pseudotriton montanus. The distribution of the mud salamander in Maryland has been dealt with by Miller (2011, 2014), but for the purpose of this article I quote from Mansueti's odd treatment of this species. Mansueti (1941a), reporting a species new to the state, but unaware of that fact, writes: "I have one specimen from a small spring near Vineyard [Baltimore County]. In Northwest Baltimore, John and William Norman found this species almost as common as the *ruber*." However, eight months later, Mansueti (1941b) has completely forgotten about the Vineyard specimen and states: "Heretofore, the writer did not have the faintest idea that this species occurred on the Coastal Plain . . .," but the only locality mentioned by him is, again vaguely, "northwestern section of Baltimore." The actual site is Western Run Parkway (NHSM 1209, 21 March 1940; NHSM 1222, 3 August 1940), which lies in the piedmont. Earlier, in his introductory material, Mansueti (1941b) again states that this is a "species generally characteristic of the Coastal Plain." Although this has since proven to be the case, Mansueti provides no evidence for his statements and fails to acknowledge the guidance that J. A. Fowler provides earlier in Mansueti (1941a). Harris (1969b) does not record this species from Baltimore, although it had been reported from the city by Fowler (1941) 28 years earlier, based on the specimens just cited (but with date discrepancies), which Harris should have been aware of. Harris (1969b) also lists and (1975) "cites" Fowler (1941). In his 1975 survey Harris plots a site in the east-central portion of the city; however, its basis is known only to him.

Pseudotriton ruber. Mansueti (1941b) lists 12 localities, but only two sites, both from Baltimore County, were vouchered at the time: Vineyard, Patapsco State Park (e.g., NHSM 31, 23 February 1936) and Loch Raven (NHSM 292, 294, 11 April 1939). Harris (1969b, 1975) plots only one locality for Baltimore, which is probably based on Clipper Mill Road (NHSM/ HSH 79, 26 February 1959). Mansueti overlooks some of the following records for the city and Harris overlooks all of them: Loch Raven Boulevard (NHSM 396, -- -- 1941; NHSM 601, 8

October 1941); Pimlico (NHSM 1218-1220, 1261-1265, 5 April 1941); Western Run Parkway (NHSM 1207, 12 August 1940; NHSM 1412, 5 April 1942); Gardenville (NHSM 1418, -- April 1947), St. Paul's School, Mount Washington (NHSM 1607, 28 April 1947); Forest Park (NHSM 1921, 11 April 1948); JCT Frankford Avenue and Radecke Avenue (NHSM 3331, no date). Additional material from Baltimore: Clipper Mill Road (NHSM 3334-3342, 16 April 1958); Mount Pleasant Golf Course (TSU 531, ca. 1970) and Druid Hill Park (TSU uncatalogued, 24 July 1961). Reed (1957b) lists two localities for Baltimore formerly in the collection of R. F. Daffin: "Herring Run" (Chinquapin Run) at Belvedere Avenue, 11 May 1953, and Herring Run near Mount Pleasant Golf Course, 3 October 1954. Cooper (1956) attributes two localities, Furnace Creek and Sawmill Creek (Anne Arundel County) to Mansueti (1941b), although he does not list them.

Salamandridae

Notophthalmus viridescens. In a bizarre utterance Mansueti (1939) states: "They [*N. viridescens*] finally develop from their aquatic form to the terrestrial Spotted Salamander [*Ambystoma maculatum*]." Better informed, Mansueti (1941b) later asserts: "Both the land and water stages have been collected in abundance throughout the selected area . . .," but of 11 localities listed there is no support for seven of them: Crownsville (Anne Arundel County), Gwynn's Falls Park, Herring Run Park (Baltimore City), Bare Hills (documented later as USNM 144283-144287, 8 April 1960), Catonsville, "Gunpowder Falls area," Towson (Baltimore County). Mansueti's (1941b) "Western Run Parkway and surrounding region" (Baltimore City) locality is not well expressed. No material was definitely extant from the Parkway area itself at the time, although one specimen (NHSM 1210, 5 April 1942) would be collected subsequently. There is also another specimen (NHSM 882) from this area, but it lacks a date. Reed (1938), in a reference overlooked by Mansueti (1941b), records the species from Cross Country Boulevard and later (1957b) refines it to JCT Cross Country Boulevard and Glen Avenue, -- April 1936. J. Norman (1939) does not report the species from Western Run Parkway, although he does mention an individual from Curtiss-Wright Airport, which would fall into Mansueti's "surrounding region." Mansueti's listing for Randallstown (Baltimore County) is based on only one specimen (NHSM 1274, 1 June 1940). None of the preceding is in accord with the species being "collected in abundance," nor does the extensive collecting that has been conducted since Mansueti's time indicate that newts are even common, let alone abundant, in the Maryland piedmont or anywhere on the coastal plain. Harris (1969b, 1975) overlooks the Cross Country Boulevard, Curtiss-Wright Airport and Western Run Parkway sites and plots nothing for the city. A site for Baltimore County overlooked by Mansueti (1941b) and Harris (1969b, 1975) is McMahon Quarry (NHSM 60, 8 July 1939) and vicinity McMahon Quarry (NHSM 1247-1254, 2 April 1940). W. Norman (1939) calls it "the most abundant of all the salamanders" at McMahon Quarry, a reference listed by Mansueti (1941b) and Harris (1969b, 1975). There is no support for Mansueti's claim that newts occur in the upper Patapsco State Park. Although Harris (1969b, 1975) maps at least one site for this area, it is not vouchered.

Bufo

Bufo americanus. Mansueti's confusion with *Bufo* starts with his 1939 publication where he states, concerning the Patapsco State Park (Baltimore and Howard Counties): "It is found everywhere, especially in the sandy portions of the Park." In his 1941a article he claims otherwise: "I have been studying and collecting amphibians and reptiles in the Patapsco State Park for approximately five years . . ." and proceeds to note that "This toad is rather uncommon in the park . . ." Eight months later, Mansueti (1941b) changes his mind again: "this toad has been collected and recorded from all through the Patapsco State Park . . ." *B. americanus* is (or was) indeed common in Patapsco State Park: two large series exist from Glenartney, Baltimore County [TSU 128 (30), 3 April 1963; TSU 193 (19), 3 April 1962]. Evidently Mansueti's field work did not include trips during this species' breeding period, either in the park or anywhere locally. More confusion is to be found in Mansueti (1940a): "This warty denizen of Maryland fields has been collected in fair numbers at Cherry Hill [Baltimore]," but no specimens exist and he fails to list it in Mansueti (1941b). He then undercuts this statement in his section on "Possible Occurrences of Other Species," under *Bufo fowleri*: "This toad was very probably collected among the American Toads, its close mimic; however, no definite conclusions can be made, because of the lack of specimens." By the time of his 20-mile radius paper (Mansueti, 1941b), *B. americanus* is not listed from Cherry Hill, but *B. fowleri* is. Mansueti (1941b) also states: "This species [*B. americanus*] may be regarded as relatively rare in this area," a very strange assertion that is indicative of insufficient field experience and obvious problems distinguishing *B. americanus* from *B. fowleri*. The TSU collection has approximately 70 localities for *B. americanus* in Baltimore County alone, roughly 50 of these lie within his area of concern, and nearly all were collected long after Mansueti's period of activity. Although Mansueti (1941b) states: "this toad and has been collected and recorded all through the Patapsco State Park [Baltimore and Howard Counties], Gunpowder Falls region [Baltimore County], Crownsville [Anne Arundel County], and Western Run Parkway [Baltimore City]," none of these sites were vouchered at the time. The report for Western Run Parkway is particularly important since it is one of only three unequivocal reports from Baltimore; however, J. Norman (1939) does not list it. The third report from the city is provided by Reed (1957a), who lists the species from JCT Reisterstown Road (MD Route 140) and Rogers Avenue, 25 April 1954, based on a specimen (discarded) in his private collection. Based on geography *B. americanus* would be more likely than *B. fowleri*, but in the absence of a specimen this locality should be viewed as questionable. A specimen formerly in the California Academy of Sciences (CAS 5612, 8 October 1900) from "Catonsville, Baltimore, Md" may or may not have been collected in the city, since Catonsville, an unincorporated town that currently borders the city, lies in Baltimore County. However, at the time of collection Catonsville was even farther removed from present-day Baltimore (Arnold, 1978), thus rendering the site even more problematic. There are several other species in the CAS files with these data that pose this problem, but this is one of the more important. Given the number of amphibians collected by J. Van Denburgh

in Baltimore for the CAS, it is odd that there are no *Bufo* of either species that can definitely be stated to have been collected in Baltimore. Harris (1969b, 1975) did not map any localities for Baltimore. Two documented and overlooked sites by Mansueti (1941b), both from Baltimore County, are: McMahon Quarry (NHSM 302, 309, 26 April 1940) and Kelly Branch, near (N) Towson (NHSM 431, 29 May 1938). Concerning McMahon Quarry, W. Norman (1939), a reference listed by Mansueti (1941b), states that *B. americanus* is “common everywhere about the area . . .”

Bufo fowleri. Although Mansueti (1941b) adequately distinguishes this species from *B. americanus* in his Description, he remained largely unable to distinguish the two. In his Remarks he states: “As mentioned previously, Fowler’s Toad is more abundant than the American Toad. It has been collected and observed in practically every locality suitable to its livelihood listed in the key [ca. 80 localities] . . .” Despite the stated abundance of this species, only four localities were vouchered in Mansueti’s time—one in Baltimore City: Herring Run Park (NHSM 298-299, 3 August 1941) and three in Baltimore County: Orange Grove, Patapsco State Park (NHSM 72, 21 May 1938); Glenartney, Patapsco State Park (NHSM 104, 30 May 1934; NHSM 590, 5 April 1940); near (E) Loch Raven, Maryland Training School for Boys (NHSM 432, 10 July 1938). Reports from Bare Hills, Randallstown, Reisterstown, Texas and Woodstock—all from the piedmont of Baltimore County—have no documentation and are extremely dubious; *B. americanus* is the only *Bufo* known from these areas. Mansueti’s listing of Clifton Park, Druid Hill Park, Gwynn’s Falls Park and Western Run Parkway (Baltimore City) and Gwynn Oak Park (Baltimore County)—all important because they would help form range limits—are also unvouchered. J. Norman (1939) does not record this species from Western Run Parkway. Reed (1957a) lists the species from three sites in Baltimore: JCT South Caton Avenue and Washington Boulevard, 3 May 1954; Radecke Avenue near Moore’s Run, 19 June 1954; Herring Run Park, “W” (NW) Belair Road (US Route 1), 4 September 1955. The first specimen was in Reed’s private collection and has been discarded; it may or may not have been correctly identified. The other two specimens are in the R. F. Daffin collection; the first has been discarded, although the second is extant (NHSM uncatalogued) and is correctly identified. Harris (1969b, 1975) does not plot any sites for Baltimore, overlooking the Herring Run Park specimens; Hanover Street bridge (NHSM 1144, 20 August 1946); Montebello Filtration Plant (NHSM 1799-1801, 27 September 1947) and Frankford Avenue, 1.0 mile “E” (SE) JCT Belair Road (US Route 1) (NHSM 3023-3030, 14 August 1961). Nearly all documented localities for this species in Baltimore County are from the coastal plain, with a few showing minimal penetration into the piedmont.

Hylidae

Acris crepitans. Along with *Rana pipiens*, which may or may not have once been native to Maryland, trying to determine the distribution of this taxon is the most difficult of any species in the Maryland herpetofauna (R. W. Miller, unpublished data). In Maryland this species is almost entirely confined today to the coastal plain, but Mansueti (1941b) contributes to the confusion

by listing the species, without documentation, from the piedmont sites of Gwynn’s Falls Park and Western Run Parkway (Baltimore City) and from four sites in the piedmont of Baltimore County: Bare Hills, Lake Roland, Loch Raven, and “between Harford and Philadelphia Road [*sic*],” where there is no suitable habitat. J. Norman (1939) does not record the species from Western Run Parkway, nor did Harris (1969b, 1975) plot any records for Baltimore City. Two localities in Baltimore were once present in the CAS collection: Windsor Hills (CAS 5467-5468, 23 April 1899) and an absurdly large series from near Clifton Park (CAS 5469-5558, 27 October 1901). Other records for Baltimore: Cherry Hill (Mansueti, 1940a) and the field notes of E. C. Prince record the species from a former strip-mine pond called Blue Dam, Violetville, 11 July 1953 (four individuals) and an observation from another filled-in pond called Yellow Dam (also Violetville), 4 October 1953. These former ponds lie on the coastal plain. Of the 17 sites listed by Mansueti (1941b), only Arbutus (Baltimore County) is vouchered (e.g., NHSM 95-96, 98-100, 109, 9 July 1934). An odd record for the piedmont of Baltimore City is USNM 141109 from JCT Cylburn Avenue and Green Spring Avenue, 23 April 1949.

Reed (1956, 1957a,c), demonstrating why his herpetological work is held in low regard (e.g., Conant, 1958; Cooper, 1959, 1969; Miller, 1993, 2013), lists both *Acris gryllus gryllus* (= *A. gryllus*) and *Acris gryllus crepitans* (= *A. crepitans*) as occurring in Maryland. Reed was unaware that other authors (e.g., Viosca, 1923; Dunn, 1939) had argued for species status for both subspecies, or, more important, that the authoritative reference at the time, Wright and Wright (1949), who do recognize subspecies, do not map *A. g. gryllus* as occurring any closer to Maryland than extreme southeastern Virginia. The distributional picture has remained essentially unchanged (Conant and Collins, 1991; Mitchell and Reay, 1999). In any event, Reed (1957a) lists a specimen, since discarded, from Brooklyn, Baltimore, 10 April 1954.

“*Hyla versicolor*.” Mansueti (1941b) lists 14 localities where this species has been “collected,” but there is nothing in the NHSM collection supporting this. The sites listed by Mansueti would later be determined to be from an area occupied by both *H. chrysoscelis* and *H. versicolor* (D. C. Forester and R. W. Miller, unpublished data). Harris (1969b, 1975) plots no records for either species in Baltimore City, although NHSM 3118-3150 are from Sinclair Lane, off Frankford Avenue, and were collected on 14 June 1961. Based on the distributional pattern determined by Forester and Miller, these specimens are safely assignable to *H. chrysoscelis*.

Pseudacris crucifer. Mansueti (1941b) lists no localities for this species and states: “It is truly the most common of Maryland frogs . . .,” a comment at odds with his statement concerning *Rana clamitans* (see below). Reed (1957a) lists five localities for Baltimore: Hamilton Avenue, 1.1 miles SE Belair Road (US Route 1), 27 February 1954 and 22 May 1954; N Hamilton Avenue, 28 February 1954 (locality is quite poor unless it is the same as the first listing); 0.25 mile N Radecke Avenue, E Moore’s Run, 6 April 1954 and 22 May 1954; Herring Run Swamp near Bowley’s Lane, 20 April 1954; Chinquapin Run at Loch Raven Boulevard (MD Route 542), 14 March 1957. Speci-

mens may still be extant from sites two and four; the others have been discarded. Harris (1969b, 1975) plots one site for Baltimore, the basis for which is unknown. It may or may not be based on one or more of the following: near “St. Mary’s Seminary” (= St. Mary’s Cemetery, Homeland Avenue, Govans) (NHSM 517-519, 3 April 1941); adjacent Curtiss-Wright Airport (NHSM 714, 2 April 1942); Curtiss-Wright Airport (NHSM 1322-1323, 28 April 1940); Western Run Parkway (NHSM 1340-1360, 2 April 1941; NHSM 1361-1386, 1388-1411, 5 April 1942). Overlooked by Harris is Frankford Avenue, 1.0 mile “E” (SE) Belair Road (US Route 1) (NHSM 2952-2967, 4751, -- March 1958; NHSM 2969, no date). Additional records for Baltimore: Windsor Hills (CAS 5578-5580, 5587-5588, 9 April 1899 — destroyed) and Cherry Hill (Mansueti, 1940a).

Pseudacris feriarum. Mansueti (1941b) states: “Wherever found, this frog is very common,” but he lists only four localities, three of which, Crownsville (Anne Arundel County), Gwynn’s Falls Park (Baltimore City) and Vineyard (Baltimore County or Howard County) have no documentation. By 1941 the species had been collected at only Western Run Parkway, Baltimore City (NHSM 57, 8 July 1939; NHSM 1294-1304, 2 April 1941). Two sites overlooked by Mansueti in articles he lists in his bibliography are Curtiss-Wright Airport, Baltimore City (J. Norman, 1939; documented later as NHSM 1283-1285, 15 April 1941) and McMahon Quarry, Baltimore County (W. Norman, 1939). Mansueti (1941a), in commenting on the amphibians and reptiles of Patapsco State Park (presumably the Vineyard locality just mentioned) states: “I know of no one who has collected this species, but I have heard its call while trying to capture Spring Peepers and Cricket Frogs.” In Maryland, *Acris crepitans* typically starts calling well after *P. feriarum* has stopped (Harris, 1969b, 1975; Lee, 1973; R. W. Miller, personal observations) and Mansueti may have mistaken the encounter call of *P. crucifer* with the mating call of *P. feriarum*. [An exceptionally early date of 10 March for reproductive activity by *A. crepitans* is provided by Lee (1973). Unfortunately he provides virtually no documentation for any of his data; it is not even known which state, Delaware or Maryland or both, is intended.] However, *P. feriarum* has been collected at Glenartney, Patapsco State Park (NHSM/HS 161, 14 March 1964). Reed (1957a) lists one site for Baltimore: Herring Run Swamp near Bowley’s Lane, 20 April 1954, based on a specimen that may still be extant. Harris (1969b, 1975) plots none of the vouchered Baltimore City localities, although the one he does map has no basis in the public domain. This species was rediscovered in Baltimore in March 1992 along Vertis Park Drive; twelve uncatalogued specimens are in the TSU collection. *P. feriarum* has an odd distributional and abundance pattern in Maryland and may be considered in a future note.

Microhylidae

Gastrophryne carolinensis. Mansueti (1941b), apparently referring to Noble and Hassler (1936), states: “This species has been taken at Cove Point [Calvert County] in southern Maryland, but not in our area as yet.” Mansueti (1942), again referring to Cove Point, writes: “Dr. Noble and Mr. Hassler originally recorded this species only from the pond adjacent to the lighthouse.” Later Mansueti (1952) states that this species,

which is considered endangered in Maryland (Committee . . . , 1973; Brosnan, 1984; Maryland . . . , 1991, 1994, 2010), “is found only at Cove Point in Maryland,” overlooking that Noble and Hassler also report the species from, vaguely, “between Cove Point and Solomon’s Island.” It should also be noted that there is a contradiction between what Noble and Hassler write and what the AMNH catalogue data state. All specimens collected by them (AMNH 43999-44000, 10 June 1934; 45290-45291, -- June 1934) bear the locality Cove Point; however, Noble and Hassler write: “We *heard* [emphasis added] several calling from thick grass in a cat-tail swamp a few hundred feet from Cove Point lighthouse . . . Several other *Gastrophryne* were *collected* [emphasis added] in a fresh water swamp between Cove Point and Solomon’s Island.” There is no mention of the species being collected at Cove Point, although it would be taken frequently in the 1940s. Unfortunately it is not possible to clarify this situation since neither Noble nor Hassler left field notes, nor are there any other means of sorting their material (D. A. Dickey, personal communication, 2014). Inexplicably Hardy (1953) credits “Hecht (1946)” (this should read Hecht and Matalas, 1946; Hardy repeatedly miscites this reference throughout his article) and Wright and Wright (1949) with recording the species from Cove Point, when in fact the former authors merely cite the AMNH specimens listed above and the latter authors simply quote a portion of Noble and Hassler. Hardy also cites two references by Mansueti as reporting the species from Cove Point: an “unpublished seminar outline” from 1949 and his M.Sci. thesis from 1950, which dealt with an ichthyological subject. The former is not archived anywhere to my knowledge and would not even qualify as gray literature, and although I have not seen Mansueti’s M.Sci. thesis I doubt that it contains any original information on *Gastrophryne*. Conversely, Hardy overlooks Cooper (1947a), who reports new observations of *Gastrophryne* at Cove Point, including three individuals collected by Hardy himself. Hardy also states that the habitat for Noble and Hassler’s “between Cove Point and Solomon’s Island” site was “a temporary rain-pool,” when the authors clearly state, as already noted, that the species was “collected in a fresh water swamp . . .”

Hardy (2009), in an attempt to summarize the natural history of this species in Maryland, plots a startling record for Kent County that he does not explain, just as he provides no documentation for any of the other localities he maps, or cites any references in his text. Inexplicably he had no knowledge of its source when I questioned him about it in 2011. S. A. Smith (personal communication, 2013) states that it is based on an undocumented report from Huntingfield Pond, north of Eastern Neck National Wildlife Refuge. Choruses were allegedly heard on 21 May 2000 and 1 June 2000 by someone of uncertain identity and unknown field expertise. The Kent County “locality” constitutes a ca. 45-mile northward range extension, nearly all of it over open water, from the nearest vouchered site, Taylor’s Island, Dorchester County (AMNH 60339, 23 May 1957). Yet again we see the problems that arise when mapped localities are not documented and when peer review and editorial oversight are nonexistent.

Ranidae

Rana catesbeiana. Mansueti (1941b) lists 22 localities for this

species, but only two, both from Baltimore County, were documented at the time: two proximate sites in Patapsco State Park (e.g., Glenartney, NHSM 122-123, 6 May 1934) and near Arbutus (NHSM 722, 10 August 1940). Of the seven localities listed for Baltimore City (Brooklyn, Cherry Hill, Curtis Bay, Druid Hill Park, Herring Run Park, Hillsdale Park, Western Run Parkway), only Cherry Hill has support (Mansueti, 1940a). J. Norman (1939) does not list the species from Western Run Parkway. Overlooked by Mansueti is the only documented locality for Baltimore at the time: Gwynn's Falls Park (NHSM 324-327, 352, 467-475, metamorphosing tadpoles collected on 30 July 1940). Eight specimens from Windsor Hills, Baltimore, formerly existed in the California Academy of Sciences (CAS 5690-5693, 5695-5698), collected in 1899 and 1901. Buxbaum (1942) states: "They are common in nearly all parts of the area either in the adult or larval form." The vast majority of this area, defined by Buxbaum as Gwynn's Falls from Gwynn Oak Park, Baltimore County, downstream to Frederick Road, Baltimore City, is in Baltimore City. A second verified locality for Baltimore is Westport (USNM 140891-140892, 13 April 1949). Cooper (1947b) notes an individual "In the vicinity of the Curtiss-Wright Airport . . .," 15 March 1947, and J. E. Norman records the same observation, as Curtiss-Wright Airport, in the Journal of Field Notes, Department of Herpetology, NHSM. Reed (1957a) lists three localities for the city: small stream [Moore's Run?] near Radecke Avenue, 2 April 1954; Moore's Run near Radecke Avenue, 10 April 1954 and 8 August 1956; and Herring Run near Bowley's Lane, 10 April 1954. Specimens from the first two localities may still be extant; the specimen from the third site has been discarded. Harris (1969b, 1975) maps a site on the Baltimore City-Baltimore County boundary; its provenance is known only to him. He definitely did not plot any of Mansueti's (1941b) or Reed's (1957a) sites for Baltimore, articles he "cites" (1975) or Buxbaum (1942), which he is not aware of. An overlooked site by Mansueti (1941b) for Baltimore County is vicinity McMahon Quarry (NHSM 300-301, 18 October 1939). *R. catesbeiana* is also recorded from this locality by W. Norman (1939), a publication Mansueti (1941b) lists in his bibliography.

In a reference that escaped the notice of Cooper (1960, 1965) and Harris (1969b, 1975), Mansueti (1958) lists 23 species of amphibians and reptiles from the "Cranesville Pine Swamp" (technically Pine Swamp; better known to naturalists as Cranesville Swamp), which straddles the Garrett County, Maryland-Preston County, West Virginia boundary. Mansueti notes that all 23 species were found on the Maryland side of the swamp, "with the aid of James Fowler . . ." Five of these are undocumented and highly suspect: *R. catesbeiana*, *Terrapene carolina*, *Sceloporus undulatus*, *Thamnophis sauritus* and *Agkistrodon contortrix*. J. A. Fowler (personal communication, 1982) has no records for any of these species from Cranesville Swamp. The bullfrog Mansueti mentions is the first report for Garrett County, as well as for the Allegheny Plateau of Maryland. No specimen exists, which is particularly odd since both Mansueti and Fowler were avid collectors, and at the time Fowler was working on a book of the amphibians of Maryland with R. S. Simmons and C. J. Stine. Also, given the collecting efforts in the Cranesville Swamp, it is strange that this is the

only report. L. R. Franz, apparently following Cooper (1960, 1965), reports to Harris (1969a) what he believes is the first record for the county for a specimen he collected at New Germany on 3 September 1962. However, this specimen (NHSM 2976) has been reidentified as *R. clamitans* and bears the more precise locality of New Germany State Park. The only reliable reports I have of *R. catesbeiana* in Garrett County are from E. L. Thompson (personal communication, 2006, 2014), who has seen advanced larvae and adults in the Casselman River from the Maryland-Pennsylvania boundary to about three river miles upstream of the boundary. These observations date from 1986 to 2013. He has also seen numerous juveniles in the Youghiogheny River Lake near Selbysport, following reservoir drawdowns during the summer. They were first observed in the early 1990s and this has occurred on a number of occasions since then. Thompson has not found the species elsewhere in the Youghiogheny River. Given the widespread introduction of this frog outside of its native range (e.g., Wright and Wright, 1949; Stebbins, 2003; Casper and Hendricks, 2005), there is no reason to believe that it has not been widely introduced within its native range. That bullfrogs are known from such a limited area on the Allegheny Plateau of Maryland and have been found only recently suggests that their presence is due to introductions.

Rana clamitans. Mansueti (1941b) considers this species too common to provide localities for and states: "The Green Frog is the most abundant amphibian found anywhere in and around Baltimore. Every locality mentioned in the key is a habitat for this frog. In this [*sic*] city, this species can be found wherever civilization has not taken over completely, and has been found in every pond or stream examined." Aside from *Desmognathus fuscus*, *Eurycea bislineata*, *Plethodon cinereus*, *Pseudacris crucifer* and probably *Bufo americanus* being more common than *R. clamitans*, it is quite odd that no green frogs were present in the NHSM collection from Baltimore in Mansueti's time. Only two localities with specific data are extant from the city: Hanover Street Bird Sanctuary (NHSM 1153, 6 September 1946) and Curtis Bay (NHSM/HSB 137, 22 March 1962). The latter site is probably the sole locality plotted in Harris (1969b, 1975). A large series (45 specimens) from Windsor Hills, Baltimore, was formerly present in the CAS, collected on 23 and 29 April 1899, and CAS 5684, also destroyed, is from near Clifton Park, 27 October 1901. Other reports from the city are: Curtiss-Wright Airport and Western Run Parkway (J. Norman, 1939), Cherry Hill (Mansueti, 1940a), and unspecified points along Gwynn's Falls (Buxbaum, 1942). Reed (1957a) lists the following records for Baltimore, none of which are documented: Cross Country Boulevard, summers 1935-1938; Moore's Run, S JCT Radecke Avenue, 10 April 1954; Hillen Road, Mount Pleasant Golf Course, 5 June 1954. He also lists specimens, in the D. W. Linzey collection, that may still be extant: small stream [Moore's Run?], near Radecke Avenue, 2 April 1954 and 8 August 1956. Cooper (1958) reports a six-legged individual from "Hillsdale Golf Course" (Forest Park Golf Course), "no date is available," and Harris (2006) notes a dead individual found off Chemical Road, Curtis Bay, 24 March 1962.

Rana palustris. Mansueti (1941b) makes essentially the same claim for this frog's abundance as he does for *R. clamitans* and therefore lists no localities. Harris (1969b, 1975) appears to map

no records for Baltimore. The only extant specimens from the city are from Druid Hill Park (MVZ 46768-46769, 27 August 1948), although several localities were formerly vouchered: Windsor Hills (CAS 5329-5336, 5704-5716, various dates from 1899-1901); near Clifton Park (CAS 5337-5338, 27 October 1901) and JCT Baltimore Street and Gwynn's Falls (NHSM 436, -- August 1941). The species has also been reported from Western Run Parkway (J. Norman, 1939) and Cherry Hill (Mansueti, 1940a). Buxbaum (1942) states: "This batrachian is common all over the [Gwynn's Falls] area . . ."

"*Rana pipiens*." A state of confusion existed during Mansueti's time concerning the taxonomy of leopard frogs, a confusion that would not see partial resolution until three decades later (e.g., Pace, 1974; see also Hillis, 1988). Currently the *Rana pipiens* complex in Maryland comprises *R. palustris*, *R. pipiens* and *R. sphenoccephala*. The distribution of *R. palustris* is uncontroversial; the species occurs throughout the state. There are a few problems with *R. sphenoccephala* (beyond the scope of this note), which is overwhelmingly confined to the coastal plain. All records for *R. pipiens* are from the piedmont and mountains, and, as noted under *Acris crepitans*, whether this species was ever a part of the Maryland herpetofauna and, if so, which localities might be valid presents a challenge that is also well beyond my comments here. Mansueti (1941b) contributes to this unfortunate situation twice, first in his introductory material and then again in his Remarks. On page 10 he states: "In our area, certain species generally characteristic of the Coastal Plain, often range over the Fall Line to the edge of the Piedmont, but they (Rare Red Salamander, Leopard Frog, Common Worm Snake, Common King Snake) cannot be said to be indigenous to the Plateau." His Remarks, which contradict his earlier statement and which I quote in full, state: "The Leopard Frog is less abundant than the Pickerel Frog, but is found everywhere in our locality. While less abundant in some places, they are commoner in others. They travel widely on land in large numbers. Most specimens have been taken in the vicinity of beaches and shores." It is extraordinary that Mansueti could provide 22 localities for *R. catesbeiana*, but not a single one for *R. "pipiens"*, now seen locally to comprise *R. pipiens* and *R. sphenoccephala*. Aside from his Plate I, which depicts a *Rana "pipiens"* from Vineyard, Patapsco State Park, Baltimore County, there is nothing in the NHSM files, nor is there anything today supporting Mansueti's claim of a widespread distribution of *R. pipiens* locally or, for that matter, anywhere in Maryland. The only documented locality for *R. sphenoccephala* during Mansueti's time is Edgewood, Harford County (NHSM 577, 12 April 1938). Another vouchered locality for *R. sphenoccephala* is Vineyard, Patapsco State Park, Baltimore County (NHSM 232-234, 3 June 1935); however, these specimens are from the piedmont (just above the Fall Line), and although I have seen them it is important that their identifications be confirmed by an expert. Mansueti (1939) states: "I have seen only three specimens in my entire wanderings in this park [Patapsco State Park]." Although Mansueti does not state specifically where or when he made his observations, it is evident that he is not referring to the three specimens just mentioned from Vineyard. Harris (1966), in his checklist of the herpetofauna of the Patapsco State Park and using the name *Rana pipiens sphenoc-*

cephala states, unhelpfully: "This frog is rather rare in the park." He concludes, without any substantiation: "It also probably intergrades to some extent with *Rana p. pipiens* in the northern part of the park." Other known or presumed coastal plain records for Baltimore, which therefore can be safely assigned to *R. sphenoccephala*, are: near Clifton Park (CAS 5703, 27 October 1901 — destroyed), East Monument Street, E JCT Edison Highway, Baltimore Brick Company (NHSM 1753, 18 July 1947 — discarded) and, also discarded, Moore's Run, S JCT Radecke Avenue, 4 July 1953 (Reed, 1957a). The field notes of E. C. Prince record "*Rana pipiens*" (= *R. sphenoccephala*; number not stated) from Yellow Dam, Violetville, 11 July 1953. In the older of the two catalogues of L. R. Franz, under the entry for *Hyla "versicolor"* (= *chrysoscelis*) from JCT Frankford Avenue and Sinclair Lane, 14 June 1961 (originally LRF 242; later LRF 751-783; now NHSM 3118-3150 as cited above but slightly differently) is the note: "Breeding in small pond with *Rana pipiens*, *Bufo w. fowleri*." NHSM 4830-4831 are from Brooklyn, 4 August 1961. The most recent record from the city is: near Fort McHenry (TSU 267, 4 June 1965). Mansueti (1940a) reports the species from Cherry Hill and Buxbaum (1942) notes an unspecified site along Gwynn's Falls where "one specimen" was found by J. E. Norman and W. M. Norman. Harris (1969b) makes the statement: "Since *R. p. pipiens* and *R. p. sphenoccephala* intergrade along the Fall Line, this criteria [*sic*] has been used here to separate their ranges in Maryland." As he did in 1966, Harris provides no evidence for this statement and treats many leopard frog "records" in the vicinity of Baltimore as *R. p. pipiens*, including one he had previously (1966) assigned to *R. p. sphenoccephala*. Harris (1969b) also appears to plot one site, under *R. p. pipiens*, in Baltimore. He maps none for *R. p. sphenoccephala* for this jurisdiction. In 1975, apparently following Pace (1974), he treats leopard frogs as *R. pipiens* and *R. u. utricularia* and plots one site (apparently the same one he maps in 1969) for the latter species in Baltimore, a coastal plain site whose basis is unknown.

Rana sylvatica. This is the fifth of the five local ranids mentioned by Mansueti (1941b); again he deems it too numerous to list localities for. However, he might have cited, as opposed to merely appending, a reference of his (Mansueti, 1940b) for a long list of undocumented sites where "this species has been captured and observed . . ." Mansueti (1940b) lists eight localities for Baltimore, six of which: Druid Hill Park, Govanstown, Gwynn's Falls Park, "Hampden and Woodbury [Woodberry] Area," Herring Run Park and St. Mary's Seminary have no support. His listing for Cherry Hill, Baltimore presumably sources to Mansueti (1940a). The problematic reference to St. Mary's Seminary probably refers to St. Mary's Cemetery, Govans, in which case Govanstown becomes redundant. Mansueti (1940b) states: "The earliest [calling] date on record for Maryland is February 23, 1890, and this date was noted in Baltimore by T. H. Morgan." T. H. Morgan is a name that is otherwise unknown in the history of Maryland herpetology, and it would have been useful if Mansueti had stated that this observation was taken from Dickerson (1906; cited below as 1969), especially since it was made 50 years prior to Mansueti's statement. The earliest specimen record for Baltimore is Windsor Hills (CAS 5700, 9 April 1899 — destroyed). Harris (1969b,

1975) plots nothing for Baltimore, overlooking the localities of Curtiss-Wright Airport (NHSM 1429-1430, 15 March 1947) and Frankford Avenue, 1.0 mile "E" (SE) JCT Belair Road (US Route 1) (NHSM 3085-3086, 14 March 1959; NHSM 3165, no date), and literature citations by J. Norman (1939) for Curtiss-Wright Airport and Western Run Parkway, and those of Mansueti (1940a,b). Reed (1957a) lists four localities for Baltimore: pond N 5200 block Hamilton Avenue (this site may be in present-day Cedonia Park, in which case it lies in Baltimore County), 27-28 February 1954; Moore's Run near Belair Road (US Route 1), 28 February 1954; Moore's Run near Radecke Avenue, 3 and 6 April 1954; Herring Run Swamp near Bowley's Lane, 10 and 20 April 1954, 12 March 1955. Specimens from all four sites (those in the D. W. Linzey collection) may still be extant. Mansueti (1940b) states that he has no records from Montgomery County, although the National Museum has several specimens from or near Plummer's Island (e.g., USNM 49676-49677, 17 March 1907). In a reference overlooked by Mansueti (1940b, 1941b), Brady (1937), referring to Plummer's Island, Montgomery County, and the immediate vicinity states: "Occasional on Island. Common on mainland."

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The Suizo Project Chronicles—Paradise Discovered

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The pure serendipity of a song hitting the radio at that perfect moment in time can be downright uncanny. Just as I was about to swing a turn onto a back road that I have never explored, the blare of trumpets coming from my radio heralded *Got to Get You into My Life*. The opening stanza of this great Beatles tune goes like this:

I was alone, I took a ride,
I didn't know what I would find there
Another road where maybe I could see another kind of mind there
Oooh, then I suddenly see you . . .

Yeah, I saw “her.” A little outlier hill. It stood alone, rising roughly 60 meters above the lush desert floor. It was a rocky little eminence, out in the middle of nowhere. It had no business being where it was at. One would have to be looking hard for such a thing to even notice it. And on this day, 8 August 1992, I was looking hard for such things.

The little hill was observed as part of an intensive effort to locate new herping spots within striking distance of Tucson. During this hot monsoonal afternoon, my vehicle was careening along roads that were on the northern edges of known turf. Alert eyes were looking for side roads that branched off the roads that were well known.

A rather substantial, heretofore un-penetrated gravel road was viewed snaking its way through the remote desert, toward the little hill. I'd driven by this road a hundred times, and never even thought of noticing it. This road even had a cardboard street sign, declaring it to be “Iron Mine Road.” Given the driver's mind set, the decision to hook a right on this road was a no brainer.

After the turn, the hill was at two o'clock on the horizon, and about a half-mile distant. My spunky little Suzuki Samurai went down a gentle incline, crossed a sandy mini-wash, and sputtered up a gentle incline. Down another incline, into another sandy mini-wash, and a glance to the right caused the brakes to be applied.

A large adult Sonoran Desert Tortoise (*Gopherus morafkai*) was viewed soaking in a nearby puddle. Its head was completely out of its shell, and it seemed to be gazing my direction. The puddle was impressive in size, perhaps 20 meters across, and the tortoise was about mid-carapace deep, toward the edge closest to the road. Upon my emergence from the vehicle, and subsequent approach, it was noted that the tortoise did not flinch. This no doubt because dead tortoises don't flinch.

The first herpetological discovery in this area remains among the top ten strangest herp sightings I've ever witnessed. It was a male, his head periscoped upward, his eyes wide open, and gleaming with enough signs of life that I had to tap his shell to make sure that he was dead. Upon giving him a poke with my walking stick, he bobbed like a cork in the water, and then resumed his lifelike posture. He was a prime-of-life animal, who expired for no apparent reason. This was the best of times! Our

area was getting bombarded with rain. The puddle itself might serve to demonstrate this phenomenon.

What happened here? My own guess is that this herp cow of the desert sauntered into this puddle to drink, and perhaps in his enthusiasm with the process, the water went down the wrong pipe. Did he drink and drown? That's what I'm saying. If so, there ought to be a law against that.

As I had no further use for this particular dead tortoise, he was left as found. It was time to find my way to the hill. Thankfully, there were no further interruptions to the process. A convenient fork appeared to my right, and took me straight toward the target. Just as I got to the southwestern-most edge of the prominence, the road forked left, and a narrow parking place, just wide enough to squeeze my little rig in, appeared on my left. As Mother Repp never raised a child so foolish as to not park in an available parking spot exactly where I wanted to be . . . I parked there. This being done, there was little else to do but emerge from the vehicle, and gaze at the hill.

Vast stretches of white-colored boulders rumbled from top to bottom, the bottommost structures being less than a stone's-throw away from the vehicle. Saguaro cacti, tall and stately, were peppered helter-skelter among, beneath, and above the boulders. The slope was also gaily decorated with palo verde trees, mesquites, small ironwoods, prickly pears, limber bushes, hedgehog cacti, and various other plants too numerous to elucidate here. The generous rainfall of 1992 had added an uncharacteristic verdant hue to the hillside. In short, I was seeing a hill that was never going to look better than it did the day I first beheld it.

Now comes the disappointment. I didn't set foot on the hill. This was a scouting trip, meant to be enjoyed from the interior of an air-conditioned vehicle. It was way too hot to go clambering about on some little desert hill—no matter how inviting.

It was also way too hot for that 16-inch Long-nosed Leopard Lizard (*Gambelia wislizenii*) to come twitching out of the undergrowth. The spotted little behemoth sniffed at my feet a bit while pausing in my shade. I could easily have bent over and snatched it off the ground, were I so inclined. Instead, I just gazed lovingly down at it in wide wonderment, amazed and pleased that such a wary species as this would choose to be so bold. Even as it buggered off, it did so with leisure, allowing me to follow quietly behind it for some distance.

The year 1992 was one of the top herping years that this Arizona herper has ever experienced. In addition to record numbers of snakes being encountered, it was also a year of scouting, and zeroing in on the best of what this state has to offer. As I waved goodbye to the dead tortoise at the end of my excursion, I had no way of knowing how closely my life would one day be intertwined with this particular patch of ground.

My next visit to the little hill transpired on 23 August 1992.



Roger's playground. The Suizo Mountains as viewed from three miles to the south. Iron Mine Hill is the small bump at left center of the image. Roger's rules number 4 and 5, "The place must be scenically pleasing to the eye," and "Hilltop views are best when uncluttered by human habitation," are clearly demonstrated in this image.

This day was one of those rare dreary, overcast days where hard rain fell across the entire span of the Tucson Valley and beyond. My friend Dennis Caldwell was along for the ride. We took a short walk on the west side of the hill, close to the parking spot that had been discovered 15 days before. This trip was significant in three ways. The first was that Dennis found a young tortoise, which was the first herp to ever be encountered on the hillside itself. The second was the actual naming of the hill in my notes. To this day, the name "Iron Mine Hill" (which has no other name to my knowledge) has stuck. The third significant event, most worthy of mention, was that Dennis pronounced Iron Mine Hill as "good." Compliments from Dennis are rarer than a virgin in a maternity ward, and are not to be taken lightly.

But compliments from the likes of Dennis Caldwell are not enough to make closely monitoring a patch of ground last for over 20 years. In 1992, Iron Mine Hill had yet to prove itself worthy of such effort. With this Arizona herper, there are seven ingredients conducive to the kind of commitment that has been demonstrated to the place. Said ingredients are:

1. The place has to be less than an hour's drive from home.
2. There has to be a good chance of herp encounters during the drive there and/or back.
3. Upon arrival, the chance of a herp encounter must transpire from the moment one steps out of the vehicle. (See also point 6).
4. The place has to be scenically pleasing to the eye.
5. Private residences must be miles away. (Hilltop views are best when uncluttered by human habitation).
6. For countless reasons, vehicular accessibility is a must.

7. Point 7 is the biggest. The place has to have herps deemed cool and watchable.

Points 1 through 6 were apparent with the first two visits to Iron Mine Hill, but it was the third visit that nailed point 7. Said third visit occurred on 1 November 1992. Within ten minutes of emerging from the vehicle, two Western Lyresnakes (*Trimorphodon biscutatus*) were found in separate boulder crevices. The words "cool" and "watchable" apply to such finds as lyresnakes to this herper. They are cool because they are snakes, and they are watchable because once one finds their lairs in late fall, one can count on seeing them multiple times throughout the winter and early spring. And there is also a strong possibility that once they leave their crevice in the spring, they will return the following fall. In short, a lyresnake in a crevice can provide years of entertainment. And two lyresnakes in crevices doubles the fun.

The simple act of finding the two lyresnakes assured that I would continue to visit Iron Mine Hill. Even if nothing else had been found on that little hill, I would still be going there today to check on them. But, of course, many other herpetological treasures were uncovered with the visits that followed.

When it comes to settling into new territory, a journey of 10,000 beers must begin with a six-pack. The many beers, er uh, visits that followed revealed that this little hill is a very big place. We will speak more of it in the future.

For now: This here is Roger Repp, signing off from Southern Arizona, where the turtles are strong, the snakes are handsome, and the lizards are all above average.

What You Missed at the August Meeting

John Archer
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To many of us of a somewhat older demographic the world of social media is like a distant cousin who seems nice but a little frivolous; someone whom we'd like to know better but is much too complicated to actually visit. Besides, there's always the phone if we really needed to communicate with them. Of course modern academics cannot afford that view and use web sites, blogs, Twitter, and Facebook to not only engage their students but to keep in touch with colleagues and the public in general. Now it is easier than ever to find information about our speakers because many of them have embraced the possibilities of the internet. Our August speaker is no exception and I found myself wandering through some of his work prior to his arrival in Chicago. His postings speak of adventures in Peru discovering new species and vital lab work tracking diseases of amphibians. His lab site is catenazzi.weebly.com and has links to his blog and other helpful sites. It's worth some exploring.

Dr. Alessandro Catenazzi is an assistant professor in the department of zoology at Southern Illinois University. In his words, "My current research interests are the systematics and conservation of Neotropical amphibians and reptiles, and the ecological dimensions of biodiversity." His talk was titled "Chytridiomycosis and the Loss of Amphibian Biodiversity in the Tropical Andes." He began with a brief outline of the recent threat to salamanders worldwide, a fungus labeled *Batrachochytrium salamandrivorans*. Dr. Catenazzi is beginning research on this disease, which has already wiped out populations of salamanders in Europe. While not yet detected in wild populations of salamanders in the U.S., this fungus has the potential of being introduced through salamanders in the pet trade such as the fire-bellied newt (*Cynops orientalis*) that is known to be a reservoir. He will test captive and wild animals for presence of the fungus. North America has the highest number of species of salamanders in the world, with the Appalachian Mountains a hotspot. If this fungus spreads through wild populations the result could be an ecological disaster.

He next gave an overview of other things happening with his lab, from bioblitzes in association with the Field Museum to thermal studies that may lead to an understanding of some effects of global climate change. About 25% of the 7400 or so described species of amphibians have been identified in the last ten years with an average of two new species being described per day. Bioblitzes are an important means of discovering what exists on our planet. Alessandro's lab is also correlating thermal studies with cladistic studies to determine if there is a link between thermal tolerance and species relationships. And he mentioned the research of Alex Shepack, a doctoral student



Alessandro Catenazzi. Photograph by Dick Buchholz.

doing research on populations of frogs that may be rebounding from the devastation caused by the fungus *Batrachochytrium dendrobatidis*, a pathogen that the entire world, for obvious reasons, normally abbreviates as Bd. I see no reason to go against the trend on this. Dr. Catenazzi specifically mentioned this research because it is being partially funded by a grant from your society.

Alessandro moved into the main topic of his presentation. We are in a period of extinction that rivals the extinction ending the era of dinosaurs. Amphibians are leading the current race to oblivion. Forty-two percent of all amphibian species are in decline and 30% are threatened with extinction. Historically, amphibians have gone extinct at the rate of 1 species every 500 years. But in just the last 30 years, 200 species have disappeared. Amphibians have survived through three mass extinctions, but may be facing more devastation now. Fungal diseases are not new. They've affected everything from potato crops during the Irish famine to bats with white-nose syndrome. What is new about Bd is the rapidity with which it kills off frog populations. In a few days an entire population of frogs may be lost, making it very difficult to determine cause and effect because rarely can an observer manage to be on site during the die-off. Is Bd the culprit of these declines?

Alessandro gave a brief description of Bd. It was first described in 1999. Bd has two life stages, sessile reproductive zoospores that reside in the skin of the animals and produce motile, unflagellated zoospores that mostly reinfect the same host but live long enough in water to cause virulent infections in other frogs. The fungus blocks the sodium-potassium pathways and the animal usually dies of a heart attack. Current swabbing techniques allow detection of the quantity of zoospores infecting an animal, which essentially determines whether or not the animal will die from the disease.

One of the reasons I admire researchers is the creative ways they use to test their hypotheses and Dr. Catenazzi and his associates developed several approaches to this problem. He centered his studies in South America along the Andes. South America is hotspot of amphibian diversity with many more amphibians than elsewhere in the world. Studying the historical data showed a strong correlation between the discovery of Bd in an area and the decline of frog species. But there is also a correlation between global warming and the population declines.

So Dr. Catenazzi then checked to see if Bd was enzootic (always there but occasionally erupting), epizootic (erupting in previously unaffected populations) or panzootic (erupting in many and widespread previously unaffected populations). If the

outbreaks of Bd are epizootic it would be indicated by spatial clustering and temporal clustering, if enzootic by spatial clustering but not temporal clustering, and if panzootic by temporal clustering but not spatial clustering. This might be worth a little thought and maybe looking up the definitions to further clarify my attempts at explanations, but it's worth the effort to appreciate what Alessandro's team found.

Looking at data for the Atlantic forests of Brazil (*Mata Atlantica*) shows that the disease has been in the populations for well over a hundred years, so enzootic. In Central America it has moved from population to population from Mexico south since 1972, suggesting epizootic. But when reviewing the data for two species of frogs along the Andes, along with samples taken of live frogs and preserved museum frogs, the results can only rule out that Bd is epizootic and seem to point toward a

combination of enzootic and panzootic.

Currently Dr. Catenazzi's associates are doing studies of bacterial strains that seem to be able to resist Bd infections. This may give hope for stopping this disease in the future, but in spite of the disease being easily cured in captivity, a solution to wild extinctions is still not on the horizon.

I once again have failed to convey the wit of Dr. Catenazzi, the clarity of his presentation, or the beauty of some of his photos. The talk with the accompanying slides was much easier to follow than what I can include in this article, and the follow-up questions provided answers for the curious. I'd need at least a chapter in a book or a complete paper to convey all the information that Alessandro so readily revealed in his talk. Just another reason you should come to the meetings rather than rely on my feeble attempts to recreate them.

News and Announcements

FUNDING FOR PRAIRIE RESEARCH

Prairie Biotic Research (PBR) is an all-volunteer, Wisconsin nonprofit established in 2000 to foster basic biotic research in prairies and savannas. One way we do this is through a competitive Small Grants Program that funds grants up to \$1000 to individuals for the study of any grassland taxon anywhere in the USA. We support both natural history and experimental science. We are especially eager to support independent researchers (those lacking institutional support), but anyone having a U.S. Social Security number may apply. Since 2002, we've awarded 211 grants worth \$202,881 to people in 34 states to study insects, plants, mammals, reptiles, slime molds, mycorrhizal fungi, spiders, snails, amphibians, birds, fish, invasive species, effects of management, and the human dimensions of conservation. Many of these grants supported graduate student research. In 2016, we expect to fund at least 15 grants of up to \$1000 each with the donations we have received, including some restricted by donors to support research in IA, IL, MI, MN, ND, SD, or WI.

To apply for a grant: Visit our newly redesigned website (prairiebioticresearch.org) to learn more, to find our proposal form, instructions, and a sample researcher agreement form that winners of this competition must sign. Check out the history and overview files in the Small Grants section of the website to see what sorts of proposals have won funding in the past. Several winning proposals from past years are available as models on our website. Review the reports submitted by researchers of past years. Those who won funding in 2015 are ineligible for this funding in 2016, but those who won funding longer ago are welcome to submit proposals to further that same work or to support a new project. In past years, we required submission of hard copy proposals, but not any more. Beginning this year, we want you to submit your proposal electronically, as a pdf file attached to an email. We must receive your proposal via email by December 20, 2015.

Become a supporter: Please make a donation to support our work; you can now do so using Visa or Mastercard through PayPal on our newly redesigned website. We cannot give away money that we don't have. Any amount is welcome. PBR is volunteer-run so our overhead is very low. You may specify that your entire tax-deductible donation be given to researchers through our Small Grants Program, or to expand our research endowment that produces income we give away annually through this program. Please help us to help others!

Michael Anderson, Craig Brabant, Rebecca Christoffel, Linda Duever, Jaime Edwards,
Brick Fevold, Joshua Kapfer, Kerry Katovich, Douglas LeDoux, Victoria Nuzzo, Ron Priest,
Dennis Schlicht, Steven Sullivan, Scott Swengel, Andrew Williams, Daniel Young,
who comprise the Board of Directors and Scientific Advisors of Prairie Biotic Research, Inc.

In Memoriam: Charles Wilson Painter, 1949–2015

Lee A. Fitzgerald
Texas A&M University

Charles Wilson Painter, herpetologist, naturalist, mentor, author, blacksmith, father, husband, friend, artist, passed away on 12 May 2015. We will miss Charlie as a beloved member of our herpetological community and hold the fondest memories of his vast knowledge of natural history, humor, mastery of the camp kitchen, and the exquisite care and attention he gave to all his endeavors and friendships. It seems everyone who accompanied Charlie, whether for a day or a month, returned with stories they will tell for a lifetime. Born 23 February 1949, Charlie grew up in rural Louisiana and Arkansas. One starting point in his professional career in herpetology could be his service in the US Army in South Korea, where he amassed a collection of about 1,500 specimens. While in graduate school at University of Louisiana at Monroe, Charlie completed his master's thesis on the herpetofauna of Colima, Mexico. He relocated to Albuquerque in the late 1970s and spent the rest of his life in New Mexico. Charlie continued graduate work at University of New Mexico and in the early 1980s worked on several interesting projects in the Southwest and Mexico focused on herps, fishes, and some feathered reptiles. Charlie landed the job of his dreams in 1985 when he became the first herpetologist for the New Mexico Department of Game and Fish. The job title fit him perfectly, Endangered Species Biologist. Charlie likened his position to a show he and his brother Robert watched as kids, and said he never imagined he would "be so lucky to ride through the desert like the Lone Ranger, having one adventure after another." Charlie spent 28 years in this position, not just sharing adventures, but initiating and completing countless studies that accumulated a vast body of critically important information on the natural history, distribution, and conservation status of amphibians and reptiles throughout New Mexico. As Curatorial Associate at the Museum of Southwestern Biology, University of New Mexico,



Charlie deposited thousands of specimens and was a central figure in the Division of Amphibians and Reptiles. Charlie led the effort to create and publish *Amphibians and Reptiles of New Mexico*, which still stands as a fine example of a scholarly monograph of a regional herpetofauna. Other notable achievements include Charlie's record of more than 80 scholarly publications, successfully pushing legislation to control wildlife trade in New Mexico, and a series of long-term studies on lizard communities in several locations, montane rattlesnakes, and the enigmatic decline of leopard frogs. Charlie's work had direct impact on conservation

of all the endemic and exploited amphibians and reptiles in New Mexico. In the policy arena, he was a staunch defender of species and their habitats, guided by a deep conservation ethic backed by scientifically defensible arguments. In recognition of these career achievements Charlie received the Alison Haskell Award in Herpetofaunal Conservation from Partners in Amphibian and Reptile Conservation and the Lifetime Achievement Award from the Gila Natural History Symposium. Charlie built his career around a philosophy of embracing broad collaborations and fostering and implementing good research. In doing so, he became the hub of field-based herpetological research and conservation in New Mexico, forging new relationships, and mentoring more young biologists than we could name, including a corps of more than 20 professional field technicians who themselves have progressed in their careers at numerous universities, agencies, and private firms. Charles W. Painter is survived by his loving wife and partner in herpetology, Lori King Painter, his daughter, Ashley Painter, stepdaughter Kelly Senyé, and friends all over the world. We will profoundly miss him and remain thankful for legacies he left for us in herpetology and life.

Unofficial Minutes of the CHS Board Meeting, August 14, 2015

President John Archer called the meeting to order at 7:32 P.M. Board members Rachel Fessler, Ed Huether and Andy Malawy were absent.

Officers' Reports

Treasurer: A printed report was not available. John Archer summarized the Excel file.

Membership secretary: Mike will keep those memberships which expired in June on the mailing list an extra month because renewal notices did not get sent out on time.

Sergeant-at-arms: Dick Buchholz informed the board that there were 27 people at the July meeting.

Committee Reports

Shows:

- Notebaert Nature Museum, first full weekend of each month.
- Bug Fest at Red Oak Nature Center, Batavia, August 22, 9 A.M.–2 P.M.
- UnityFest, Marquette Park, Chicago, August 22, 10 A.M.–3 P.M.
- Mesothelioma fundraiser, August 22, that Rich Crowley and Bob Bavirsha will attend.
- Pet Promenade, Ty Warner Park, Westmont, September 12, 10 A.M.–3 P.M.
- Back to School event in Chicago's Chatham neighborhood, September 12.
- NARBC, Tinley Park, October 10–11.
- SEWERFest, November 8.

Dick Buchholz noted that he has collected over \$500 in donations at shows.

Junior herpers: August meeting featured Asian beauty snakes. 33 in attendance. September meeting will initiate a new format that will be more interactive. Topic is arboreal animals. Someone from Central Illinois Herp Society came to observe and will be back in October.

Library: John Archer proposed getting UVB meters that members could check out to test their bulbs. Price range \$75–175. No action taken. Teresa suggested getting a book on arboreal snakes since there is not one in the collection.

Old Business

ReptileFest: Northeastern Illinois University looks likely as our venue for 2016. John Archer has met with someone from the university. Agreement should be formalized soon. Dates for 'Fest will be April 9–10, with setup on the 8th.

Stuffed animals stored in the kitchen area at the Notebaert had been donated by Mike Scott. Meant for Junior Herpers.

New Business

Midwest Herpetological Symposium: This year's symposium will take place in Madison, Wisconsin, November 8–10. CHS is hosting next year. Possible dates are late September 2016. Mike Dloogatch will look into hotels that could be used. John stated that someone will need to take the lead in organizing the event.

Awards: As sergeant-at-arms, Dick Buchholz is chair of the committee to choose recipients of the annual service awards. He has begun the process.

Field trips: Andy Snyder at Brookfield Zoo is willing to do a behind-the-scenes tour. A volunteer is needed to arrange it.

Amazon Account: Mike Dloogatch reported that the CHS received a mailing from Amazon.com offering a business account. The credit card could be linked to it. It was agreed that this could simplify ordering products. Mike will look into it.

The meeting adjourned at 8:55 P.M.

Respectfully submitted for the recording secretary by Teresa Savino

Advertisements

For sale: **highest quality frozen rodents.** I have been raising rodents for over 30 years and can supply you with the highest quality mice available in the U.S. These are always exceptionally clean and healthy with no urine odor or mixed in bedding. I feed these to my own reptile collection exclusively and so make sure they are the best available. All rodents are produced from my personal breeding colony and are fed exceptional high protein, low fat rodent diets; no dog food is ever used. Additionally, all mice are flash frozen and are separate in the bag, not frozen together. I also have ultra low shipping prices to most areas of the U.S. and can beat others shipping prices considerably. I specialize in the smaller mice sizes and currently have the following four sizes available: Small pink mice (1 day old—1 gm) , \$25 /100; Large pink mice (4 to 5 days old—2 to 3 gm), \$27.50 /100; Small fuzzy mice (7 to 8 days old—5 to 6 gm) , \$30/100; Large fuzzy mice /hoppers (10 to 12 days old—8 to 10 gm), \$35/100 Contact Kelly Haller at 785-234-3358 or by e-mail at kelhal56@hotmail.com

For sale: Standard 24" Neodesha reptile cages, 3 × 6" vent on top, tempered glass front. Like new condition, no burns or stains, original glass. These cages do not have the dam (horizontal molding that crosses the entire front width of the cage, used to hold back bedding material)—easier to clean without the dam. About 20 currently available, \$45 each. Linda Malawy, (630) 717-9955, linda_malawy@hotmail.com.

For sale: High quality, all locally captive-hatched tortoises, all bred and hatched here in the upper Midwest. Baby leopards, Sri Lankan stars, and pancakes usually available, and are all well-started and feeding great! Leopards are \$125 ea., Sri Lankans (2012 hatched) \$475 ea. And Pancakes are \$195 ea. Leopards for out of state sale/shipping require a veterinary health certificate (inquire for cost). E-mail at KKranz1@wi.rr.com or call Jim or Kirsten at 262 654 6303.

Herp tours: **Costa Rica herping adventures.** Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site <http://hiss-n-things.com> and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney, 305-664-2881.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to mdloogatch@chicagoherp.org.

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UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, September 30, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Steve Sullivan**, senior curator of urban ecology at the Chicago Academy of Sciences and its Peggy Notebaert Nature Museum, will present a program on “The Foundation of Everything You Know about Nature: The Methods of Howard K. Gloyd and Other Post-Linnaean Adventurers.”

The program for the October 28 meeting has not yet been confirmed.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago’s newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

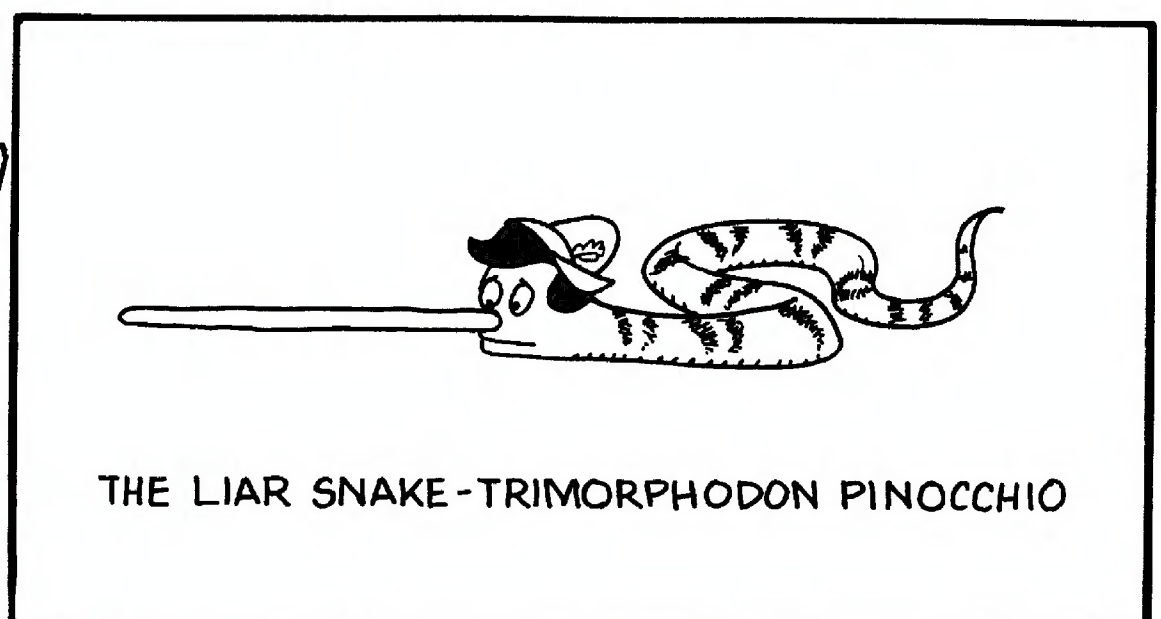
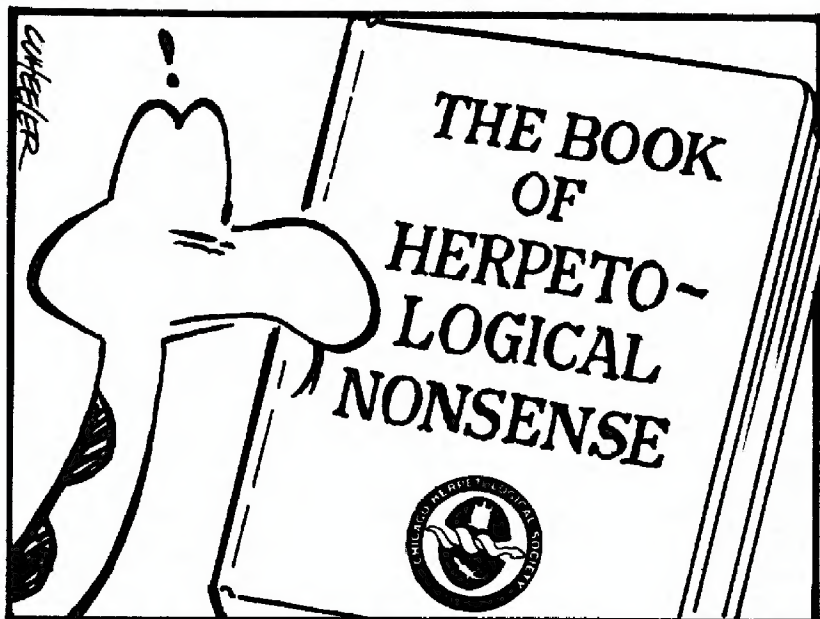
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., Friday, October 16, 2015, at the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group’s Facebook page.

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